

**SOUTH FLORIDA ECOSYSTEM RESTORATION  
TASK FORCE**

**Volume 1**

**COORDINATING SUCCESS 2004:  
Strategy for Restoration of the South Florida Ecosystem  
And  
TRACKING SUCCESS:  
Biennial Report for August 2002 – July 2004**

**To the U.S. Congress, Florida Legislature, Seminole Tribe of Florida and Miccosukee  
Tribe of Indians of Florida**

*This is Volume 1 of a two-volume report.  
Volume 1 contains the coordination strategy and biennial report of the South Florida Ecosystem Restoration Task Force.  
Volume 2 contains the integrated financial plan, including descriptions of all the individual projects that participating entities have identified as supporting ecosystem restoration.  
Both volumes combine information from federal, state, tribal, and local agencies and therefore do not strictly follow any single agency's format.*

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## GLOSSARY

### Terms

**Acre-foot:** The volume of water, 43,560 cubic feet that will cover an area of one acre to a depth of one foot.

**Adaptive assessment:** A process for learning and incorporating new information into the planning and evaluation phases of the restoration program. This process ensures that the scientific information produced for this effort is converted into products that are continuously used in management decision-making.

**Benthic:** Bottom dwelling, as in organisms

**Best management practices:** (BMPs) Agricultural and other industrial management activities designed to achieve an important goal, such as reducing farm runoff or optimizing water use and water quality.

**Economic equity:** The fair treatment of all persons regardless of color, creed, or belief in aspects of opportunities and/or diseconomies regarding economic or environmental activities.

**Ecosystem:** A community of organisms, including humans, interacting with one another and the environment in which they live.

**El niño/la niña:** Warming and cooling patterns in the Pacific Ocean that affect the earth's atmosphere.

**Environmental justice:** The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

**Eutrophication:** The natural or cultural enrichment of an aquatic environment with plant nutrients leading to rapid ecological changes and high productivity.

**Exotic or invasive species:** Exotic species are kinds of plants and animals not native to an area

and found beyond their natural range. Exotic plants are introduced by people intentionally for social and economic reasons, and as accidental consequences of travel and commerce. Often such species are highly invasive and dominating to native forms.

**Goal:** Something to be achieved. Goals can be established for outcomes (results) or outputs (efforts).

**Hydrology:** The study of the properties, distribution, and effects of water. When used in the Task Force strategy and biennial reports, the term refers to the quantity, timing, and distribution of water in the ecosystem.

**Hydropattern:** Water depth and duration, along with the quantity, timing, and distribution of surface water to a specific area; critical for maintaining various ecological communities in wetlands.

**Hydroperiod:** Depth and duration of inundation in a particular wetland area.

**Minimum flows and levels:** Florida statute requires water management districts to set water levels for each major body of water "at which further withdrawals would be significantly harmful to the water resources or ecology of the area...."

**Nonpoint source (NPS) pollution:** Comes from many diffuse sources. NPS pollution is caused by rainfall (or snowmelt in colder climates) moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even underground sources of drinking water

**Nonstructural Flood Protection:** Use of operation schedules, redirecting flows, or other operating strategies to manage water other than building new or modifying existing infrastructure

**Objective:** A goal expressed in specific, directly quantifiable terms.

**Outcome:** An end result. When used in the Task Force strategy and biennial reports, a quality of the restored South Florida Ecosystem.

**Output:** Levels of work and effort. When used in the Task Force strategy and biennial reports, the products, activities, or services produced by a project or program.

**Periphyton:** The biological community of microscopic plants and animals attached to surfaces in aquatic environments. Algae are the primary component in these assemblages and periphyton can be very important in aquatic food webs, such as those of the Everglades.

**Performance measure:** A desired result stated in quantifiable terms to allow for an assessment of how well the desired result (outcome) has been achieved.

**Restoration:** When used in the Task Force strategy and biennial reports, the recovery of a natural system's vitality and biological and hydrological integrity to the extent that the health and ecological functions are self-sustaining over time.

**Sheetflow:** Water movement as a broad front with shallow uniform depth.

**South Florida Ecosystem:** An area consisting of the lands and waters within the boundaries of the South Florida Water Management District and the Multi-Species Recovery Plan, including the Kissimmee Basin, Lake Okeechobee, Everglades, the Florida Keys, and the contiguous nearshore coastal waters of South Florida.

**Stormwater:** Surface water runoff resulting from rainfall that does not percolate into the ground or evaporate.

**Subsidence:** The lowering of the soil level caused by shrinkage of organic layers. This shrinkage is due to desiccation, consolidation, and biological oxidation.

**Success indicator:** A subset of performance measures selected as a good representation of overall performance.

**Sustainability:** The state of having met the needs of the present without endangering the ability of future generations to be able to meet their own needs.

**Vision:** An aspiration of future conditions. In this case the results that the Task Force members intend to achieve in terms of ecosystem health and quality of life for South Florida residents and visitors.

**Wetlands:** Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetative or aquatic life that require saturated or seasonally saturated soil conditions for growth and reproduction.

### **Acronyms**

|       |                                                         |
|-------|---------------------------------------------------------|
| ASR   | Aquifer storage and recovery                            |
| BAPRT | Best available phosphorus reduction technology          |
| BMP   | Best management practices                               |
| C&SF  | Central and Southern Florida Project                    |
| CARL  | Conservation and Recreational Lands Program             |
| CERP  | Comprehensive Everglades Restoration Plan               |
| CSOP  | Combined Structural and Operational Plan                |
| DACS  | Florida Department of Agriculture and Consumer Services |
| DCA   | Florida Department of Community Affairs                 |
| DEP   | Florida Department of Environmental Protection          |
| DOI   | U.S. Department of the Interior                         |
| EAA   | Everglades Agricultural Area                            |
| EAR   | Evaluation and Appraisal Report                         |
| ENP   | Everglades National Park                                |
| EPA   | U.S. Environmental Protection Agency                    |
| EPA   | Everglades Protection Area                              |
| ERN   | Everglades Radio Network                                |
| FEMA  | Federal Emergency Management Agency                     |
| FIATT | Florida Invasive Animal Task Team                       |

|         |                                                                  |
|---------|------------------------------------------------------------------|
| FWS     | U.S. Fish and Wildlife Service                                   |
| GAO     | U.S. General Accounting Office                                   |
| GPD     | Gallons per day                                                  |
| LAT     | Land Acquisition Team                                            |
| LILA    | Loxahatchee Impoundment<br>Landscape Assessment                  |
| LOST    | Lake Okeechobee Scenic Trail                                     |
| MAP     | Monitoring and Assessment Plan                                   |
| µ/L     | Micrograms per liter                                             |
| MERIT   | Multi-Species/Ecosystem Recovery<br>Implementation Team          |
| MFL     | minimum flows and levels                                         |
| MSRP    | Multi-Species Recovery Plan                                      |
| MWD     | Modified Water Deliveries to<br>Everglades National Park Project |
| NEWT    | Noxious Exotic Weed Task Team                                    |
| NMFS    | National Marine Fisheries Service                                |
| NOAA    | National Oceanic and Atmospheric<br>Administration               |
| NPS     | National Park Service                                            |
| NRCS    | Natural Resources Conservation<br>Service                        |
| PIR     | Project Implementation Report                                    |
| PMP     | Project Management Plan                                          |
| PPB     | Parts per billion                                                |
| PSTA    | Periphyton stormwater treatment area                             |
| RECOVER | Restoration Coordination and<br>Verification Team                |
| SAV     | Submerged aquatic vegetation                                     |
| SCG     | Science Coordination Group                                       |
| SCT     | Science Coordination Team                                        |
| SFERTF  | South Florida Ecosystem Restoration<br>Task Force                |
| SFWMD   | South Florida Water Management<br>District                       |
| SOR     | Save Our Rivers                                                  |
| STA     | Stormwater treatment area                                        |
| SWIM    | Surface Water Improvement and<br>Management Act                  |
| TMDL    | Total maximum daily load                                         |
| USACE   | U.S. Army Corps of Engineers                                     |
| USDA    | U.S. Department of Agriculture                                   |
| USGS    | U.S. Geological Survey                                           |
| WCA     | Water Conservation Area                                          |
| WRAC    | Water Resources Advisory<br>Commission                           |
| WRDA    | Water Resources Development Act                                  |

DRAFT

## EXECUTIVE SUMMARY

Significant progress has been made in developing plans and initiating action to restore the quality of the South Florida Ecosystem, one of America's unique natural areas. The revised strategy and biennial report, both included in Volume 1, summarize recent progress, ongoing challenges, and plans that guide the coordinated efforts of local, state, tribal, and federal governments as they implement their respective work. The strategy and biennial report were prepared in accordance with Congressional guidance by the South Florida Ecosystem Restoration Task Force (hereinafter referred to as the Task Force), an intergovernmental group created by the Congress in 1996 to coordinate the restoration effort.

The purpose of the revised strategy ("Coordinating Success") is to update the strategy submitted to Congress in 2002. This strategy responds to Congressional direction to outline how the restoration effort will occur, identify the resources needed, establish responsibility for accomplishing actions, and link strategic goals to outcome-oriented goals. The strategy describes how the restoration effort is being coordinated among many government entities to achieve broad improvements throughout the ecosystem. The strategy retains the three strategic goals first published in July 2000: (1) get the water right; (2) restore, preserve, and protect natural habitats and species; and (3) foster compatibility of the built and natural systems. (These goals and the measurable objectives are summarized in the Strategic Plan Table 1.)

The overall premise of restoration is that the ecosystem must be managed from a systemwide perspective. Rather than dealing with issues independently, the challenge is to seek out the interrelationships that exist between all the components of the ecosystem. The same issues that are critical to the natural environment — getting the water right and restoring, preserving, and protecting diverse habitats and species — are equally critical to maintaining a quality built environment and lifestyle for South Florida's residents and visitors.

The success of this comprehensive approach will depend upon the coordination and integration of hundreds of individual restoration projects carried out by various agencies at all levels of government, and with input from many stakeholders. Each agency brings its own authority, jurisdiction, capabilities, and expertise to this initiative and applies them through its individual programs, projects, and activities.

The Task Force strategy is to focus the efforts of its members on a shared vision and set of strategic goals and objectives for achieving that vision, to coordinate individual member projects, to track and assess progress through indicators of success, and to facilitate the resolution of issues and conflicts as they arise.

The biennial report ("Tracking Success") reports on the progress made between August 2002 and July 2004 in achieving the strategic goals and objectives included in the Task Force strategy, and it also addresses the efforts underway by the Task Force to adopt and track a set of indicators of success. The indicators of success, which are currently being revised for inclusion in future reports, will reflect the expected performance, in terms of ecosystem health and other water-related benefits, from all the projects when viewed collectively.

Strategic Goals and Objectives of the South Florida Ecosystem Restoration Task Force

GOAL 1: GET THE WATER RIGHT

*Subgoal 1-A: Get the hydrology right*

- Objective 1-A.1: Provide 1.3 million acre-feet of surface water storage by 2036
- Objective 1-A.2: Develop aquifer storage and recovery (ASR) systems capable of storing 1.6 billion gallons per day by 2028
- Objective 1-A.3: Modify 335 miles of impediments to flow by 2019

*Subgoal 1-B: Get the water quality right*

- Objective 1-B.1: Construct 69,000 acres of stormwater treatment areas by 2035
- Objective 1-B.2: Prepare plans, with strategies and schedules for implementation, to comply with total maximum daily loads for 100 percent of impaired water bodies by 2011

GOAL 2: RESTORE, PRESERVE, AND PROTECT NATURAL HABITATS & SPECIES

*Subgoal 2-A: Restore, preserve, and protect natural habitats*

- Objective 2-A.1: Complete acquisition of 5.8 million acres of land identified for habitat protection by 2015.
- Objective 2-A.2: Protect 20 percent of the coral reefs by 2010
- Objective 2-A.3: Improve habitat quality for 2.4 million acres of natural areas in South Florida

*Subgoal 2-B: Control invasive exotic plants*

- Objective 2-B.1: Coordinate the development of management plans for the top twenty South Florida invasive exotic plant species by 2011
- Objective 2-B.2: Achieve maintenance control of Brazilian pepper, melaleuca, Australian pine, and Old World Climbing Fern on South Florida's public conservation lands by 2020
- Objective 2-B.3: Complete an invasive exotic plant species prevention, early detection, and eradication plan by 2005

GOAL 3: FOSTER COMPATIBILITY OF THE BUILT AND NATURAL SYSTEMS

*Subgoal 3-A: Use and manage land in a manner compatible with ecosystem restoration*

- Objective 3-A.1: Designate an additional 480,000 acres as part of the Florida Greenways and Trails System by 2008
- Objective 3-A.2: Increase participation in the Voluntary Farm Bill Conservation Programs by 230,000 acres by 2014
- Objective 3-A.3: Acquire an additional 2,500 acres of park, recreation, and open space lands by 2005
- Objective 3-A.4: Complete five brownfield rehabilitation and redevelopment projects by 2006
- Objective 3-A.5: Increase community understanding of ecosystem restoration

*Subgoal 3-B: Maintain or improve flood protection in a manner compatible with ecosystem restoration*

- Objective 3-B.1: Maintain or improve existing levels of flood protection

*Subgoal 3-C: Provide sufficient water resources for built and natural systems*

- Objective 3-C-1: Increase the water available by target of 478.5 million gallons per day by 2008
- Objective 3-C.2: Increase volumes of reuse on a regional basis
- Objective 3-C.3: Increase water available through the SFWMD Alternative Water Supply Development Program

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The Task Force strategy is not synonymous with the Comprehensive Everglades Restoration Plan (CERP); although the CERP is the single largest program in the strategy. Congress authorized the CERP in Section 601 of the Water Resources Development Act (WRDA) of 2000, as a framework for modifications to the Central and Southern Florida (C&SF) Project. (WRDA 2000, Title VI, is attached as Appendix D.) The modifications are intended to restore, preserve, and protect the South Florida Ecosystem while providing for other water-related needs of the region, including water supply and flood protection.

It is important to note the significant contributions from other programs toward achievement of the Task Force's three strategic goals. While the CERP is vital to accomplishing all the strategic goals, many other restoration projects are also important to achieving restoration. Some of the non-CERP projects that are also critical to achieving goal 1 (get the water right) include the Kissimmee River Restoration, Modified Water Deliveries to Everglades National Park, Canal-111, and Everglades Construction Projects. For goal 2 (restore, preserve and protect natural habitats and species), the state's Florida Forever program and Save Our Rivers (SOR) Program are the lynchpins of the effort to acquire important habitat lands. For goal 3 (foster compatibility of the built and natural systems), state and local governments are now developing ways to coordinate land use and water supply planning to ensure availability of adequate water supplies to meet the legislative direction to support existing development but not degrade the environment. The State of Florida's ongoing Florida Forever and SOR increase the spatial extent of open space and multiply its benefits by linking park, conservation, recreation, water resource, and other open space lands. These efforts help protect natural systems by providing additional habitat and serving as buffers between the natural and built environments.

Restoring the Everglades is a national and state priority. The South Florida Ecosystem not only supports the economy and the high quality of life of Floridians and Native American Indians who live there, but also enriches the national legacy of all Americans. By working cooperatively and communicating with all stakeholders in this unique conservation effort, the Task Force members can ensure that all interests are protected as each member works to fulfill its individual responsibilities to local residents and the nation at large.

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| <p>DRAFT</p> <p>STRATEGY PURPOSE AND BACKGROUND<br/>RESTORATION STRATEGY<br/>VISION AND INDICATORS OF SUCCESS<br/>STRATEGIC GOALS AND OBJECTIVES<br/>LINKAGES BETWEEN WORK EFFORTS AND ECOSYSTEM<br/>RESTORATION<br/>OVERVIEW OF MAJOR PROGRAMS AND COSTS</p> | <p>COORDINATING SUCCESS:<br/>STRATEGY FOR THE RESTORATION OF THE SOUTH FLORIDA ECOSYSTEM</p> |
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STRATEGY PURPOSE AND BACKGROUND

## *Purpose*

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The purpose of this strategy is to describe how the Task Force will coordinate the intergovernmental effort to restore and sustain the imperiled South Florida Ecosystem. The American people have a strong national as well as a state and local interest in preserving this 18,000-square-mile region of subtropical uplands, wetlands, and coral reefs that extends from the Kissimmee Chain of Lakes south of Orlando through Florida Bay and the reefs southwest of the Florida Keys. The South Florida Ecosystem not only supports the economy and the distinctive quality of life of the Floridians and the Native American Indians who live there, but also greatly enriches the shared legacy of all Americans. It encompasses many significant conservation areas, including Everglades, Biscayne, and Dry Tortugas National Parks, Big Cypress National Preserve, the Fakahatchee Strand, the Arthur R. Marshall Loxahatchee National Wildlife Refuge, John Pennekamp State Park, and the Florida Keys National Marine Sanctuary.

Many federal, state, tribal, and local entities are working to address the ecological conditions in South Florida. The Task Force reports on and facilitates the coordination of the work. In 1996 Congress directed the Task Force to produce a restoration strategy that meets four requirements:

- outline how the restoration effort will occur
- identify the resources needed
- establish responsibility for accomplishing actions
- link the strategic goals established by the participants to outcome-oriented goals

This strategy describes how the restoration effort is being coordinated. The Task Force members have agreed upon guiding principles for restoration and a vision for the results to be achieved; they have established three broad strategic goals and measurable objectives for the work needed to achieve the vision; they have identified the projects needed to achieve the objectives; they are coordinating those projects so that they are mutually supportive and nonduplicative; and they are tracking progress toward both the work-oriented strategic goals and the results-oriented vision. The vision, strategic goals, objectives, ~~indicators of success~~, ~~(under revision)~~, and individual project data (including cost, responsible agency, and targeted completion dates) are all specified in this strategy. The project details are summarized in **Error! Reference source not found.** Additional information for each project is available in Volume 2, which contains the complete Integrated Financial Plan.

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The Task Force strategy is designed for planning purposes only, is subject to modification as needed, and is not legally binding on any of the Task Force members. Each Task Force member entity retains all of its sovereign rights, authorities, and jurisdiction for implementation of the projects identified as part of the Task Force strategy.

## *Who Is Involved: The South Florida Ecosystem Restoration Task Force*

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Six federal departments (twelve agencies), seven Florida state agencies or commissions, two American Indian tribes, sixteen counties, scores of municipal governments, and interested groups and businesses from throughout South Florida participate in the restoration effort. Four sovereign entities (federal, state, and two tribes) are represented. The Task Force sought extensive involvement from local agencies, citizen groups, nonprofit organizations, and other interested parties as part of its assessment for this strategy.

The Task Force was created in 1993 as a federal interagency partnership with informal participation by the State of Florida, the Seminole Tribe of Florida, and the Miccosukee Tribe of Indians of Florida. In recognition of the magnitude of the restoration effort and the critical importance of partnerships with state, tribal, and local governments, the Task Force was expanded to include tribal, state, and local governments by the Water Resources Development Act of 1996 (WRDA 1996).

WRDA 1996 outlines the Task Force duties:

- consult with, and provide recommendations to, the Secretary of the Army during development of the Comprehensive Everglades Restoration Plan (CERP)
- coordinate development of consistent policies, strategies, plans, programs, projects, activities, and priorities for addressing the restoration, preservation, and protection of the South Florida Ecosystem
- exchange information regarding programs, projects, and activities of the agencies and entities represented on the Task Force to promote ecosystem restoration and maintenance
- establish a Florida-based Working Group that includes representatives of the agencies and entities represented on the Task Force as well as other governmental entities as appropriate for the purpose of formulating, recommending, coordinating, and implementing the policies, strategies, plans, programs, projects, activities, and priorities of the Task Force
- may establish advisory bodies as determined necessary to assist the Task Force in its duties, including public policy and scientific issues
- when desired, designate an existing advisory body or entity that represents a broad variety of private and public interests for additional input into their work
- facilitate the resolution of interagency and intergovernmental conflicts associated with the restoration of the South Florida Ecosystem among agencies and entities represented on the Task Force
- coordinate scientific and other research associated with the restoration
- provide assistance and support to agencies and entities represented
- prepare an integrated financial plan and recommendations for coordinated budget requests to be expended by agencies and entities on the Task Force
- submit a biennial report to Congress that summarizes the restoration activities and progress made toward restoration

In December 2003 the Task Force revised the Working Group charter to streamline and clarify its duties. To assist the Task Force in fulfilling its obligations the Working Group was tasked to develop, for Task Force approval, a draft biennial report that summarizes the activities of the Task Force and progress made toward restoration; a draft integrated financial plan and recommendations for a coordinated budget request; a draft biennial update to the strategic plan; a draft biennial update to the total cost report; and responses to specific priority activities assigned by the Task Force.

The Task Force established a Science Coordination Group in December 2003 to assist it in coordinating scientific and other research. This group was charged to develop, for Task Force approval, a draft science coordination plan that tracks and coordinates programmatic-level science and other research, identifies programmatic level priority science needs and gaps, and facilitates management decisions; and specific responses to priority work activities assigned by the Task Force.

The Task Force does not have any oversight or project authority, and participating agencies are responsible for meeting their own projected accomplishments. The Task Force serves as a forum in which ideas are shared and consensus is sought. This enhances the productivity of each member government or agency effort. (The Task Force charter is attached as Appendix E.)

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### ***Brief History of South Florida Ecosystem Management***

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Early land developers viewed the Everglades and related habitats as worthless swamps. By the late 1800s efforts were underway to "reclaim" these swamplands for productive use. These initial efforts were encouraging, and more wetlands were drained for agriculture and for residential and commercial development. Little by little, canals, roads, and buildings began to displace native habitats.

In 1934 national concern about the degradation of the South Florida Everglades led to the creation of Everglades National Park. The portion of the Everglades included in the park was to be permanently reserved as a wilderness with no development that would interfere with preserving the unique flora and fauna and the essential primitive character existing at the date of enactment. This mandate to preserve wilderness is one of the strongest in the national park system. The park was authorized by Congress in 1934 and opened to the public in 1947.

The Miccosukee and the Seminole Indians, whose culture and way of life depend on a healthy Everglades Ecosystem, had been living and thriving in this diminishing natural environment for generations. The legislation establishing Everglades National Park specifically clarified the rights of the Miccosukee Tribe to live in the park and set aside land along the border for the tribe to govern its own affairs in perpetuity.

The region has historically been plagued with both hurricanes and droughts. A 1928 hurricane caused Lake Okeechobee to overflow, drowning approximately 2,400 people. Droughts from 1931 to 1945 lowered groundwater levels, creating serious threats of saltwater intrusion into wells and causing damaging muck fires. In 1947 successive storms left 90 percent of South Florida – more than 16,000 square miles from south of Orlando to the Keys – under water for the better part of the year.

In 1948 the ongoing efforts to drain the Everglades, protect the region from hurricanes, and make the region habitable culminated in the Congressional authorization of the original Central and Southern Florida Flood Control Project that later evolved into the current C&SF Project, a flood control project jointly built and managed by the U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD). The C&SF Project significantly altered the region's hydrology. The primary project goal was to provide water and flood control for urban and agricultural lands. Another goal was to ensure a water supply for Everglades National Park and fish and wildlife resources in the Everglades. The first goal was achieved. The project succeeded in draining half of the original Everglades and allowing for expansion of the cities on the lower east coast of Florida and the farming area south of Lake Okeechobee known as the Everglades Agricultural Area (EAA). The second goal has not yet been accomplished. The correct quantity, quality, timing, and distribution of water to the South Florida Ecosystem have been the subject of much study. Many projects have been undertaken to restore natural water flows to this region.

The original C&SF Project water supply component for Everglades National Park was based on the understanding of the park hydrologic and ecologic needs at the time the plan was developed. Subsequent research has indicated the importance of hydroperiods to the health of natural systems as opposed to a conventional water supply delivery. Historically most rainwater flowed slowly across the extremely flat landscape, soaking into the region's wetlands and forming what became known as the "River of Grass." This natural functioning system began to be altered a century ago. The most significant alteration was the C&SF canal system, comprised of over 1,800 miles of canals and levees and 200 water control structures,

which drained approximately 1.7 billion gallons of water per day into the Atlantic Ocean and the Gulf of Mexico. As a result, not enough water was available for the natural functioning of the Everglades or for the communities in the region. Water quality also was degraded. Phosphorus runoff from agriculture and other sources polluted much of the northern Everglades and Lake Okeechobee and caused destructive changes to the food chain.

During the 1970s and 1980s public policy, in line with predominant public opinion, moved in the direction of environmental protection and restoration in South Florida. In 1972, for example, the Florida Legislature passed the Florida Water Resources Act to balance human and natural system water resource needs. In the same year the Florida Land Conservation Act was enacted to protect lands for environmental protection and recreation. In 1983, under the leadership of Governor Bob Graham, the Save Our Everglades program was initiated to protect and restore the Kissimmee River Basin, Lake Okeechobee, the state-managed water conservation areas (WCAs), Big Cypress Swamp, Everglades National Park, Florida Bay, and endangered wildlife. In 1987 the Florida Legislature passed the Surface Water Improvement and Management Act (SWIM), which directed the five water management districts to clean up the priority water bodies in the state. In 1988 Congress, with strong support from the State of Florida, passed the Big Cypress National Preserve Addition and Florida/Arizona Land Exchange Acts, which added 146,000 acres to the Big Cypress National Preserve. This act also affirmed the rights of the Seminole Tribe and Miccosukee Tribe of Indians to customary use and occupancy in the Preserve. In 1989 Congress passed the Everglades Expansion and Protection Act, which added 107,600 acres to Everglades National Park and called for increased and improved water flows to the park.

Despite progress towards restoration in the 1980s and early 1990s, dramatic growth in the population and development of South Florida kept pressure on the environment. Research at this time detected declines in many native plant and animal species and heightened phosphorus pollution of the Everglades. Particularly alarming was evidence of the decline of Florida Bay, indicated by dramatic losses in seagrass habitat, algae blooms, reductions in shrimp and many fish species, and a decline in water clarity.

In 1988 the federal government sued the State of Florida, alleging that the state had failed to direct the SFWMD to require water quality permits for the discharge of water into the C&SF Project canals, thereby causing a violation of state water quality standards and causing conditions that allowed for the replacement of native species in the Everglades marsh with invasive vegetation. After three years and much additional litigation, no settlement had been reached. In 1991 Governor Lawton Chiles agreed to reach a settlement. For several years, mediation efforts helped reduce the scope of conflict between the state and federal governments and between agricultural and environmental interests. In February 1992 a court settlement was achieved to reduce the level of phosphorus entering Everglades National Park and the Arthur R. Marshall Loxahatchee National Wildlife Refuge by creating artificial wetlands designed to process and remove nutrients from agricultural runoff. In 1993 the sugar industry agreed to adopt best management practices and to pay for approximately one-third of the costs of the artificial wetlands to help reduce the phosphorous pollution in the Everglades. The settlement also called for additional measures to be implemented over the long term to meet a numeric phosphorus criterion for class III waters.

The mid-1990s saw the establishment of two important consensus building forums for Everglades issues. In 1993 the South Florida Ecosystem Restoration Task Force was established through a federal interagency agreement. In recognition of the magnitude of the restoration effort and the critical importance of partnerships with state, tribal, and local governments, the Task Force was formalized and expanded to include tribal, state, and local governments in WRDA 1996. In 1994 the Governor of Florida established the Governor's Commission for a Sustainable South Florida "to develop recommendations and public support for regaining a healthy Everglades Ecosystem with sustainable economies and quality communities." The Task Force and the Governor's Commission have been instrumental in formulating consensus for Everglades restoration.



In 1996 two significant pieces of legislation were approved by the U.S. Congress. The Federal Agriculture Improvement and Reform Act (the Farm Bill) provided \$200 million to conduct restoration activities in the Everglades Ecosystem, including land acquisition, resource protection, and resource maintenance. The second piece of legislation, WRDA 1996, clarified Congressional guidance to the USACE to develop a comprehensive review study for restoring the hydrology of South Florida. This study, commonly referred to as "the Restudy," has since resulted in the CERP, a consensus plan that was approved by Congress and signed by the president as part of WRDA 2000. The CERP is designed to reverse unintended consequences resulting from the operation of the C&SF Project. The physical limitations of the existing water management system still have the potential to exacerbate resource conflicts. Implementation of the CERP should increase the system's flexibility, helping water managers avoid such conflicts. In 2000 Governor Jeb Bush proposed, and the legislature passed, the Everglades Restoration and Investment Act, which committed the state to provide \$2 billion over ten years to implement the first ten years of the CERP.

The Seminole and Miccosukee Tribes, which have maintained their lifestyle in this natural system, became active participants in the dialogue on restoration and were formally added to the Task Force under WRDA 1996. Because the 1929 Enabling Act establishing Everglades National Park recognized the Miccosukee Tribe of Indian's right to live there, Congress passed the Miccosukee Reserved Area Act, which clarified the rights of the Miccosukee Tribe to live in the park and set aside 666.6 acres along the border for the tribe to govern in perpetuity. A primary purpose of this act was to clarify the right of the Miccosukee Tribe to live and govern its own affairs on the acreage set aside for the tribe by this federal action. The presence of two Indian tribes living in the Everglades, whose culture and way of life depend on the health of this ecosystem, is an important reason to restore the ecosystem.

The growing body of federal and state legislation and regulatory approvals directed at managing growth and protecting the natural environment is summarized in Strategic Plan Table 1.

**Strategic Plan Table 1. Significant Events in South Florida Ecosystem Management**

|      |                                                                                                                                                                                                                                                                                  |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1934 | Everglades National Park is authorized.                                                                                                                                                                                                                                          |
| 1972 | Florida Water Resources Act establishes fundamental water policy for Florida, attempting to meet human needs and sustain natural systems; puts in place a comprehensive strategic program to preserve and restore the Everglades ecosystem.                                      |
| 1972 | Florida Land Conservation Act authorizes the issuance of bonds to purchase environmentally endangered and recreation lands.                                                                                                                                                      |
| 1974 | Big Cypress National Preserve is created; legislation incorporates concerns of the Seminole Tribe and the Miccosukee Tribe for access to this preserve.                                                                                                                          |
| 1982 | Florida Indian Land Claims Settlement Act gives the Miccosukee Tribe a perpetual lease from the State of Florida for the use and occupancy of 189,000 acres in WCA-3A, which is to be kept in its natural state, and a 75,000-acre Federal Indian Reservation in the Everglades. |
| 1983 | Florida Governor's Save Our Everglades Program outlines a six-point plan for restoring and protecting the South Florida Ecosystem so that it functions more like it did in the early 1900s.                                                                                      |
| 1984 | Florida Warren Henderson Act authorizes the Department of Environmental Regulation (now the FDEP) to protect the state's wetlands and surface waters for public interest.                                                                                                        |
| 1985 | Florida Local Government Comprehensive Planning and Land Development Regulation Act requires the development and coordination of local land use plans.                                                                                                                           |
| 1987 | Compact among the Seminole Tribe, the State of Florida, and the federal government is completed, clearly describing the Tribe's water supply and flood control rights; the goal of the compact is to harmonize state and federal water law.                                      |
| 1987 | The Seminole Tribe transfers ownership to lands critical to the State of Florida's Everglades Construction Project in WCA-3.                                                                                                                                                     |
| 1987 | Florida Surface Water Improvement and Management Act requires the five Florida water management districts to develop plans to clean up and preserve Florida lakes, bays, estuaries, and rivers.                                                                                  |
| 1988 | Federal government sues the State of Florida, alleging that the state had failed to direct the SFWMD to                                                                                                                                                                          |

|             |                                                                                                                                                                                                                                                                                                                |
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|             | require water quality permits for the discharge of water into the C&SF project canals.                                                                                                                                                                                                                         |
| 1988        | Land Settlement Act transfers acreage in WCA-3 and the Rotenberger tract to the State of Florida for Everglades restoration.                                                                                                                                                                                   |
| 1988        | Big Cypress National Preserve Addition Act expands the preserve and affirms the Seminole and Miccosukee Indian Tribes' customary use and occupancy rights in the preserve.                                                                                                                                     |
| 1989        | Everglades National Park Expansion Act adds the East Everglades addition.                                                                                                                                                                                                                                      |
| 1990        | Florida Preservation 2000 Act establishes a coordinated land acquisition program at \$300 million per year for ten years to protect the integrity of ecological systems and to provide multiple benefits, including the preservation of fish and wildlife habitat, recreation space, and water recharge areas. |
| 1990        | Florida Keys National Marine Sanctuary and Protection Act establishes a 2,800-square-nautical-mile marine sanctuary and authorizes a water quality protection program.                                                                                                                                         |
| 1991        | Florida Everglades Protection Act provides the SFWMD with clear tools for ecosystem restoration.                                                                                                                                                                                                               |
| 1992        | Federal government issues a consent decree on Everglades water quality.                                                                                                                                                                                                                                        |
| 1992        | WRDA 1992 authorizes the Kissimmee River Restoration Project and the C&SF Project Restudy; also provides for a fifty/fifty cost share between the federal government and the project sponsor, the SFWMD.                                                                                                       |
| 1993        | Task Force is established to coordinate ecosystem restoration efforts in South Florida.                                                                                                                                                                                                                        |
| 1993        | Seminole Tribe is approved by the EPA to establish water quality standards for reservation lands in accordance with section 518 of the Clean Water Act.                                                                                                                                                        |
| 1994        | Florida Everglades Forever Act establishes and requires implementation of a comprehensive plan to restore significant portions of the South Florida Ecosystem through construction, research, and regulation.                                                                                                  |
| 1994        | Governor's Commission for a Sustainable South Florida is established to make recommendations for achieving a healthy South Florida Ecosystem that can coexist with and mutually support a sustainable economy and quality communities.                                                                         |
| 1994        | Miccosukee Tribe is approved by EPA to establish water quality standards for reservation lands in accordance with section 518 of the Clean Water Act.                                                                                                                                                          |
| 1996        | WRDA 1996 authorizes a comprehensive review study for restoring the hydrology of South Florida; expands the Task Force to include tribal, state, and local governments; mandates extensive public involvement.                                                                                                 |
| 1996        | Section 390 of the Farm Bill grants \$200 million to conduct restoration activities in the South Florida Ecosystem.                                                                                                                                                                                            |
| 1997        | Seminole Tribe of Florida's water quality standards for the Big Cypress Reservation are approved by EPA.                                                                                                                                                                                                       |
| 1997        | Miccosukee Tribe water quality standards for the Tribe's Federal Indian Reservation establish a 10 ppb criterion for total phosphorus in tribal waters.                                                                                                                                                        |
| 1997 - 2000 | Annual Interior Appropriations Acts provide for land acquisition by the NPS and the FWS in the South Florida Ecosystem.                                                                                                                                                                                        |
| 1998        | Miccosukee Reserved Area Act clarifies the rights of the Miccosukee Tribe to live in Everglades National Park and sets aside 666.6 acres along the border for the tribe to govern in perpetuity.                                                                                                               |
| 1998        | Seminole Tribe of Florida's water quality standards for the Brighton Reservation are approved by EPA.                                                                                                                                                                                                          |
| 1998        | Miccosukee Reserved Area Act directs the Miccosukee Tribe to establish water quality standards for the Miccosukee Reserved Area (inflow points to Everglades National Park).                                                                                                                                   |
| 1999        | WRDA 1999 extends Critical Restoration Project authority until 2003; authorizes two pilot infrastructure projects proposed in the CERP.                                                                                                                                                                        |
| 1999        | Governor's Commission for the Everglades is established to make recommendations on issues relating to Everglades protection and restoration, environmental justice, and water resource protection, among other issues.                                                                                         |
| 1999        | Miccosukee Tribe water quality standards are established for the Miccosukee Reserved Area and the border near Everglades National Park and they are approved by EPA.                                                                                                                                           |
| 1999        | Florida Forever Act improves and continues the coordinated land acquisition program initiated by the Florida Preservation 2000 Act of 1990; commits \$300 million per year for ten years.                                                                                                                      |
| 1999        | Florida State Legislature passes Chapter 99-143, Laws of Florida, authorizing the SFWMD to be the local sponsor for Everglades restoration projects.                                                                                                                                                           |
| 2000        | Florida Everglades Restoration Investment Act creates a funding and accountability plan to help implement the CERP; commits an estimated \$2 billion in state funding to Everglades restoration over ten years.                                                                                                |
| 2000        | Florida Legislature passes the Lake Okeechobee Protection Act, a phased, comprehensive program designed to restore and protect the lake.                                                                                                                                                                       |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 2000 | WRDA 2000 includes \$1.4 billion in authorizations for ten initial Everglades infrastructure projects, four pilot projects, and an adaptive management and monitoring program; also grants programmatic authority for projects with immediate and substantial restoration benefits at a total cost of \$206 million; establishes a 50 percent federal cost share for implementation of CERP and for operation and maintenance. |
| 2001 | Numeric water quality criterion of 10 ppb geometric mean proposed by Florida DEP in the Everglades Protection Area.                                                                                                                                                                                                                                                                                                            |
| 2001 | WRAC is established by the SFWMD Governing Board as a representative stakeholder group to advise them on all aspects of water resource protection in South Florida.                                                                                                                                                                                                                                                            |
| 2002 | Task Force designates the WRAC as an advisory body to the Task Force on ecosystem restoration activities.                                                                                                                                                                                                                                                                                                                      |
| 2003 | Senate Bill 626 Amends the Everglades Forever Act.                                                                                                                                                                                                                                                                                                                                                                             |
| 2003 | Science Coordination Group is established with direct reporting responsibilities to the Task Force.                                                                                                                                                                                                                                                                                                                            |
| 2003 | CSOP Advisory Team is established with direct reporting responsibilities to the Task Force.                                                                                                                                                                                                                                                                                                                                    |
| 2003 | Final USACE Programmatic Regulations are issued.                                                                                                                                                                                                                                                                                                                                                                               |
| 2003 | SFWMD adopts the Long-Term Plan for achieving Everglades water quality goals.                                                                                                                                                                                                                                                                                                                                                  |
| 2003 | State of Florida initiates early start on Southern Golden Gate Estates Project                                                                                                                                                                                                                                                                                                                                                 |
| 2004 | IRL-South CERP project is approved by State of Florida under Section 373.1501.F.S.                                                                                                                                                                                                                                                                                                                                             |

### ***What Is at Stake***

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Current efforts to restore the South Florida Ecosystem must address a century of changes to the environment that have put the ecosystem in jeopardy. Evidence of the seriousness of the problem includes

- fifty percent reduction in the original extent of the Everglades, including important habitat and groundwater recharge areas
- ninety percent reductions in some wading bird populations
- sixty-nine species on the federal endangered or threatened list
- declines in commercial fisheries in Biscayne and Florida Bays
- loss of over five feet of organic soil in the Everglades Agricultural Area
- decline in the clarity of water in the Florida Keys
- infestations of exotic plant species on over 1.5 million acres
- damaging freshwater releases into the St. Lucie and Caloosahatchee Estuaries
- loss of 40,000 acres of grass beds in Lake Okeechobee
- loss of tree islands and damaging ecological effects in the state-managed WCAs
- loss of 37 percent of living corals at forty sites in the Florida Keys National Marine Sanctuary from 1996 to 2000

Today South Florida is home to over 6.5 million people and the population is expected to double by 2050. The region also receives more than 37 million tourists annually. The quality of life in South Florida and the region's \$200 billion economy depend on the health and vitality of the natural system. If the coral reefs, estuaries, and shallow waters of Florida Bay cannot support populations of aquatic species, South Florida's tourism industry and associated economy will decline. The loss of fertile soil and conversion of land to nonagricultural uses will make farming and ranching harder to maintain and less profitable.

The stakes are high. The South Florida Ecosystem once supported some of the greatest biodiversity on earth. The biological abundance and the aesthetic values of the natural system warrant regional, national, and even international interest and concern. In addition to numerous local parks and private conservation areas, South Florida encompasses Federal Indian Reservations, thirty state parks and numerous state forests and wildlife management areas, including seventeen state aquatic preserves; thirteen federal wildlife refuges and a national marine sanctuary; and three national parks, a national preserve, and a national estuarine research reserve. Everglades National Park has been designated a world heritage site, a wetland of international significance, and an international biosphere reserve. Biosphere reserves are protected examples of the world's major ecosystem types, which are intended to serve as standards for measuring human impacts on the environment worldwide.

## RESTORATION STRATEGY

The Task Force strategy includes a set of guiding principles, which have been adopted by the Task Force member agencies to guide all aspects of ecosystem restoration, and a clear definition of the roles of the Task Force as a coordinating, facilitating, and reporting body. Each of these is described separately in this chapter.

### *Guiding Principles*

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#### **The Ecosystem Must Be Managed as a Whole**

This is the overall premise that guides ecosystem planning and management. It demands that managers, scientists, and the public view the natural and the built environments and the resources needed to support them as parts of a single larger system. The challenges faced in South Florida must be solved collaboratively. Rather than dealing with issues independently, the challenge is to seek out the interrelationships and mutual dependencies that exist among all the components of the ecosystem.

The Task Force advocates a systemwide approach that addresses issues holistically, recognizing that the various levels of government have distinct jurisdictions and responsibilities that can be coordinated but not shared. For example, the state retains exclusive responsibility for all land management and water use except for lands and waters specifically reserved by the federal government or the Miccosukee or Seminole Tribes.

Holistic management by a variety of jurisdictions will require broad-based partnerships, coordinated management, and considerable public outreach and communication.

*Broad-based partnerships:* It is critical that federal, state, local, and tribal governments and other interested and affected parties work together in broad-based partnerships. Maintaining open communication and examining different views and needs will form the basis for the respect and trust needed to work together.

*Coordinated management:* To be successful, governmental entities will need to coordinate their ecosystem restoration activities, including the coordination of land and water use and the development of cooperative programs. The Task Force will foster this cooperation and facilitate the resolution of conflicts and disputes among the diverse participants.

*Public outreach and communication:* Innovative partnerships and coordinated management will not be possible without the understanding, trust, and support of the public, including historically underserved communities and neighborhoods. Therefore, public outreach and communication will be an important part of the ecosystem restoration efforts. Outreach strategies will seek two-way communication with all public sectors to broaden understanding and to instill a sense of stewardship among all South Floridians and visitors.

#### **The Natural and Built Environments Are Inextricably Linked in the Ecosystem**

Understanding the complexities of the South Florida Ecosystem is daunting. Until recently the term ecosystem meant the natural environment. However, the ecosystem also includes people and their built environment, which is inextricably linked to the natural environment. Events in

the built environment can have catastrophic consequences in the natural environment, such as the destruction of wetlands when they are drained for development. Similarly, disruptions in the natural environment can have catastrophic consequences in the built environment, such as the unnaturally severe flooding that occurs when natural wetlands are gone.

The Task Force recognizes that the restoration of the South Florida Ecosystem is not possible if subsequent decisions about the built environment are not consistent with ecosystem health. At the same time, the solutions to restore ecosystem health must be supportive of human needs. These links make it critical that decision makers for both the natural and the built environments be involved in the restoration effort.

#### **Expectations Should Be Reasonable**

Major ecological improvements will take many years to realize in South Florida. The large-scale hydrological improvements that will be necessary to stimulate major ecological improvements will depend upon and follow the implementation of CERP features designed to substantially increase the water storage capabilities of the regional system and to provide the infrastructure needed to move the water. Other features of the CERP must be in place before the additional storage and distribution components can be constructed and operated. Substantial alteration and degradation of the South Florida Ecosystem has occurred over many decades, and it will take decades to reverse this process.

#### **Decisions Must Be Based on Sound Science**

Science plays two major roles in the restoration process. One is to facilitate and promote the application of existing scientific information to planning and decision making. The other is to acquire critical missing information that can improve the probability that restoration objectives will be met.

The Task Force has adopted an adaptive management process, authorized by Congress in WRDA 2000, which will continuously provide managers with updated scientific information, which will then be used to guide critical decisions. In this process, scientific models provide a conceptual framework and identify critical support studies. Support studies provide data and analysis that lead to better understanding of problems and the development of alternative solutions. Once an alternative is implemented, monitoring is used to assess the effectiveness of the action and provide feedback on ways to modify it (if warranted). Similarly, monitoring data can be used to revise and refine the original concepts and models, thereby continuing an interactive feedback loop of decision making, implementation, and assessment.

#### **Environmental Justice and Economic Equity Need to Be Integrated into Restoration Efforts**

The federal members of the Task Force are directed by federal law and executive orders to promote economic equity and environmental justice through fair treatment of all persons, regardless of color, creed, or belief. Fair treatment associated with economic equity includes efforts required to expand opportunities to small business concerns, including those controlled by socially and economically disadvantaged individuals and persons with limited proficiency in English. Fair treatment associated with environmental justice means that no group of people, including no racial, ethnic, or socioeconomic group, should bear a disproportionate share of any negative environmental consequences resulting from industrial, municipal, or commercial operations or the execution of federal, state, or local programs or policies. In WRDA 2000 Congress specifically recognized the importance of ensuring that small business concerns owned

and controlled by socially and economically disadvantaged individuals are provided opportunities to participate in the restoration process. It also recognized the importance of ensuring, to the maximum extent practicable, that public outreach and educational opportunities are provided to all the individuals of South Florida.

The unique cultural and ethnic diversity of South Florida's population, with its strong representation of peoples from all over the world, will require significant efforts on behalf of the restoration partners to ensure that projects are implemented in ways that do not result in disproportionate impacts on any communities. Additional targeted efforts will be needed to provide opportunities to socially and economically disadvantaged individuals and small business to participate in the implementation of restoration programs and projects.

The Task Force and Working Group see this guiding principle as critical to long-term success. The Task Force Working Group established a task team for outreach and environmental and economic equity. The team solicited input about the various restoration outreach efforts of member agencies and developed an inventory of these efforts.

#### **Restoration Must Meet Applicable Federal Indian Trust Responsibilities**

The restoration of the South Florida Ecosystem involves a unique partnership between the Indian tribes of South Florida and the federal, state, and local governments. In carrying out the Task Force's responsibilities laid out in WRDA 2000, the Secretary of the Interior must fulfill the obligations to the Indian tribes in Florida specified under the Indian Trust Doctrine, and other applicable legal obligations. All federal agencies have a trust responsibility and are responsible for meaningful consultation with the tribes under Executive Order 13175 and Secretarial Order 3206.

### ***Task Force Roles in the Coordination of the Restoration Effort***

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The roles of the Task Force are not to manage the South Florida restoration, but to facilitate the coordination of the restoration, provide a forum for the participating agencies to share information about their restoration projects and resolve conflicts, and report on progress. Congress and other stakeholders are particularly interested in how each individual agency's efforts contribute to the larger framework of total ecosystem restoration. The Task Force strategy and biennial report are critical vehicles for sharing information.

Providing a forum for consensus building and issue engagement is a collaborative role, not one in which the Task Force can dictate to its members. Because on-the-ground restoration is accomplished through the efforts of the individual Task Force member agencies, they are the ones that are ultimately responsible for their particular programs, projects, and associated funding. This is an important distinction.

The Task Force has no overriding authority to direct its members. Instead, each member is accountable individually to its appropriate authorities and to each other for the success of the restoration. The Task Force meets regularly to report on progress, facilitate consensus, and identify opportunities for improvement. The Task Force members coordinate and track the restoration effort as follows.

### Focus on Goals

The Task Force strategy establishes strategic goals and measures of success that represent the scope of the restoration initiative and answer these fundamental questions: What will the restoration partners accomplish? When will the restoration effort be done? What key indicators will signal progress and success?

### Coordinate Projects

To be effective, individual projects should contribute to the vision and strategic goals, be consistent with all the guiding principles, be timely, and support rather than duplicate other efforts. The Task Force strategy includes a master list of restoration projects that compiles information about goals and objectives, start and finish dates, lead agencies, and funding (see Appendix B - **Error! Reference source not found.**). The integrated financial plan in Volume 2 provides additional details about all of these projects.

### Track and Assess Progress

The Task Force facilitates the coordination of the adaptive management processes used by the member agencies to track and assess progress. Adaptive management, an important restoration concept, involves constantly monitoring project contributions, indicators of success, and current scientific information to determine the actual versus expected results of various actions. This process acknowledges that not all the data needed to restore the South Florida Ecosystem is available now. As project managers track incremental progress in achieving objectives, they may raise "red flags" alerting the Task Force members that a project (1) is not on schedule or (2) is not producing the anticipated results. The ability to anticipate problems early helps to minimize their effect on the total restoration effort. Management responses may involve revising the project design, evaluating changing resource needs, or working collaboratively on projects that fall behind. Projects that are not producing the anticipated results may be replaced with new projects. Because each Task Force member is responsible for its particular programs, projects, and funding, such decisions are made by the entities involved. The Task Force will modify the strategic goals and objectives as relevant information becomes available.

### Recognize and Work with Conflicting Goals

As restoration activities move forward in South Florida, there may be occasional conflicts between the strategic goals described in this strategy and individual agency programs or missions. When such conflicts occur, the strategic goals should prevail whenever possible, and it is the statutory duty of the Task Force to facilitate their resolution in ways that advance the strategic goals of restoring natural hydrology and ecology throughout South Florida. The Task Force recognizes that it may sometimes be necessary to take short-term or interim management actions that are not immediately consistent with long-range strategic goals, while allowing time for other activities more consistent with strategic goals to take effect. The Task Force is committed to facilitating the resolution of these issues, consistent with its statutory duties, without compromising its long-term focus on restoring natural conditions to South Florida. Where there may be conflicts between existing statutes and strategic goals, the Task Force recognizes that it may be necessary to have Congress address such issues.



### **Facilitate the Resolution of Issues and Conflicts**

Disagreements and conflict are to be expected given the scope, complexity, and large number of sponsors and interests involved in ecosystem restoration. The ability of the Task Force to resolve conflicts is complicated by the large number of governmental entities involved at the federal, state, tribal, and local levels, the differing, and sometimes conflicting, legal mandates and agency missions among the entities involved, and the diverse stakeholder interests, which include environmental, agricultural, Native American, urban, recreational, and commercial values.

The Task Force will facilitate the prevention and resolution of conflict to the extent possible by clarifying the issue(s), identifying stakeholder concerns, obtaining and analyzing relevant information, and identifying possible solutions. Although these efforts are intended to facilitate conflict resolution, opportunities will always exist for parties to pursue conflicts through litigation. Litigation may prove to be time consuming, costly, and uncertain, and it may divert resources from restoration efforts.

Changes made through project coordination, adaptive management, and the conflict resolution process will be incorporated into future editions of this strategy.

**Deleted:** Unfortunately, judicial resolution of legal claims does not always resolve the underlying conflict to the satisfaction of every party. ¶

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## VISION AND INDICATORS OF SUCCESS

One of the first actions of the Task Force was to describe a vision for a resulting condition of the South Florida Ecosystem that all the member agencies could strongly support. Translating that vision into discernable and measurable terms is an ongoing process supported by intensive discussion, research, and monitoring. Teams of scientists are working to develop and refine the indicators that the Task Force will use to know when they have finally achieved their vision. The Task Force vision is presented below, followed by a discussion of the indicators of success.

### Vision

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The participants in the South Florida Ecosystem Restoration Task Force share this vision: A healthy South Florida Ecosystem that supports diverse and sustainable communities of plants, animals, and people.

To this end, hundreds of different entities have been working for over a decade to restore and preserve more natural hydrology in the ecosystem, to protect the spatial extent and quality of remaining habitat, to promote the return of abundant populations of native plants and animals, and to foster human development compatible with sustaining a healthy ecosystem. These efforts, which are described in detail in the "Strategic Goals and Objectives" section, will continue. The results will be continuously analyzed to provide restoration managers with increasingly comprehensive information about what remains to be done to achieve ecosystem restoration.

The Task Force members believe that the efforts described in this strategy, managed through an adaptive management process, will achieve their vision. The region's rich and varied habitats — Biscayne Bay; Lake Okeechobee; the Wild and Scenic Loxahatchee River; the Caloosahatchee, St. Lucie, and other estuaries; the Everglades, mangroves, coastal marshes, and seagrass beds of South Florida; and the coral reef ecosystem of the Florida Reef Tract — will become healthy feeding, nesting, and breeding grounds for diverse and abundant fish and wildlife. The American crocodile, manatee, snail kite, Cape Sable seaside sparrow, and other endangered species will recover. The large nesting rookeries of herons, egrets, ibis, and storks will return. Commercial fishing, farming, recreation and tourism dependent businesses, and associated economies will benefit from a viable, productive, and aesthetically beautiful resource base. The quality of life enjoyed by residents and visitors will be enhanced by sustainable natural resources and by access

to natural areas managed by federal, state, and local governments to provide a great variety of recreational and educational activities.

It is important to understand that the "restored" Everglades of the future will be different from any version of the Everglades that has existed in the past. While it is very likely to be healthier than the current ecosystem, it will not completely match the predrainage system. The irreversible physical changes made to the ecosystem make restoration to pristine conditions impossible. The restored Everglades will be smaller and somewhat differently arranged than the historic ecosystem. However, it will have recovered those hydrological and biological characteristics that defined the original Everglades and made it unique among the world's wetland systems. It will evoke the wildness and richness of the former Everglades.

### Indicators of Success

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The ultimate measure of Task Force success will be the restoration of the South Florida ecosystem. The appropriate Task Force agencies are tracking progress toward this end by developing and monitoring specific indicators of ecosystem health. In general three distinctly different types of indicator provide different types of information. One type of indicator is designed to track changes in stressors on the natural system; a second is designed to track changes in ecological conditions, which are predicted to improve as a result of removing specific stressors; and a third is designed to track progress in providing for other water-related needs of the region. These indicators, , represent the myriad physical, biological, and human elements that are all interrelated as parts of the ecosystem and are all important aspects of ecosystem health. In general, indicators selected to measure responses by ecosystem stressors are physical attributes; those selected to measure improvements in ecological conditions are biological attributes; and those selected to measure other water-related needs of the region are built environment attributes. Many of these indicators will describe desired end states that may take up to fifty years to realize. A means of measuring positive indications of successional change will be necessary to assess incremental progress.

An initial set of indicators selected for inclusion in the 2002 Task Force strategy document and in the 2000-2002 biennial report to Congress, the Florida Legislature, and the councils of the Miccosukee and Seminole Tribes is included in Appendix C. With the exception of the indicator for threatened and endangered species, which came from the FWS, these indicators were based

on a RECOVER baseline report prepared in 1999 and revised in 2001. They were selected for inclusion in the 2002 Task Force strategy document and biennial report because at the time they were believed to be among the most indicative of natural system functioning throughout the region as a whole and among the most understandable and meaningful to the American people and the residents of South Florida. As stated in 2002, these were preliminary indicators that were expected to be refined as more information became available.

Over the past two reporting periods (1998-2000 and 2000-2002) a great deal of modeling and analysis has created new information that will be used to improve the initial set of indicators and to identify more accurate measures of restoration success. The ongoing discussion about indicators includes (1) how best to use them, (2) which ecological attributes are most appropriate and useful as indicators (especially the degree to which their future status may be predicted by reliable models), and (3) how to analyze and report the data in the most effective way for restoration management purposes.

The Task Force recognizes that restoration must be based on the best science available and that this will require use of adaptive management principles to continually incorporate new knowledge as it becomes available. Responding to a need to ensure that science is incorporated into decision making as effectively and efficiently as possible, and to GAO's recommendations to improve science coordination, the Task Force created a Science Coordination Group (SCG) in December 2003. The SCG is developing a science coordination plan that tracks and coordinates programmatic-level science and other research, identifies programmatic-level priority science needs and gaps, and facilitates management decisions. In August 2004 the Task Force additionally assigned this group the task of reviewing new information and providing recommendations for revising the Task Force systemwide indicators reported in the 2002 Strategic Plan and Biennial Report. The SCG will first design an open process to develop a recommended set of comprehensive systemwide indicators. This process will include the opportunity for peer review and public input. After receiving Task Force guidance, the SCG will use this process to revise the indicators, restoration endpoints, and timelines used to measure success.

Much of the new information the SCG will review is from the CERP implementation process. Responding to congressional direction that CERP restoration efforts be guided by, and continuously adapted to, the best science available, a multiagency Restoration Coordination and Verification Team (RECOVER) has been established to support the implementation of the CERP

with scientific and technical information. RECOVER is identifying indicators to be used to assess restoration progress and to adaptively manage the CERP portion of the restoration effort over time. New guidelines outlined in the *Programmatic Regulations for the Comprehensive Everglades Restoration Plan* have resulted in a set of recommended indicators for interim goals (defined in the regulations as means of measuring restoration success) and interim targets (defined as means of measuring progress in providing for other water-related needs). These indicators are now under review. The review process, which includes scientific and public review of these indicators to ensure their comprehensiveness and appropriateness to determining restoration success, is expected to continue into the fall of 2004. A peer review panel will be charged with assessing the scientific validity of the indicators and providing comment on the presentation of these indicators to the public. To further assess the utility of the indicators, the RECOVER scientific teams will use five-year incremental model runs to “observe” trends in the indicators over the life of the CERP. Once interim goals have been established by the Secretary of the Army, the Governor of Florida, and the Secretary of the Interior and interim targets have been established by the Secretary of the Army and the Governor of Florida, the indicators will be used for systemwide assessment of CERP projects to support planning and adaptive management. (Additional ongoing work to comply with the Programmatic Regulations is addressed in the biennial report, starting on page 63.)

Additional scientific and technical information not covered by the CERP is being developed and refined by federal, state, and local agencies, including the FWS, which has developed and is implementing the *Multi-Species Recovery Plan*. The Task Force will ensure that the SCG also considers indicators identified through these non-CERP efforts.

## STRATEGIC GOALS AND OBJECTIVES

The ultimate result of the Task Force member agencies' efforts should be the restoration of the South Florida Ecosystem. The direct measures of success for achieving this result are addressed in the preceding "Vision" section of this strategy.

Because of the complexity and the long time frame of this initiative, it is also important to measure and track the hundreds of activities (*outputs* in the language of performance management) that must be performed to achieve the result of a restored ecosystem. By measuring and tracking the contributions of individual and aggregated work efforts, or projects, the Task Force members can identify whether restoration activities are being implemented in a timely and effective manner.

To this end, the Task Force members have identified three strategic goals, related subgoals, and specific objectives for the work that must be done. The three strategic goals recognize that water, habitats and species, and the built environment are inextricably linked in the ecosystem and must be addressed simultaneously if the ecosystem is to be restored and preserved over the long term. The subgoals divide the goals into more definitive areas of concern:

**GOAL 1: GET THE WATER RIGHT**

Subgoal 1-A: Get the hydrology right

Subgoal 1-B: Get the water quality right

**GOAL 2: RESTORE, PRESERVE, AND PROTECT NATURAL HABITATS AND SPECIES**

Subgoal 2-A: Restore, preserve, and protect natural habitats

Subgoal 2-B: Control invasive exotic plants

**GOAL 3: FOSTER COMPATIBILITY OF THE BUILT AND NATURAL SYSTEMS**

Subgoal 3-A: Use and manage land in a manner compatible with ecosystem restoration

Subgoal 3-B: Maintain or improve flood protection in a manner compatible with ecosystem restoration

Subgoal 3-C: Provide sufficient water resources for built and natural systems

Specific objectives for what must be done in order to achieve the subgoals and goals—and ultimately the intended result of a restored ecosystem—were developed using the best information available gained through models, outputs, or research findings. Examples of these objectives include "develop aquifer storage and recovery systems capable of storing 1.6 billion gallons per day by 2028" and "protect 20 percent of the coral reefs by 2010."

The objectives included in this strategy do not comprise the exhaustive list of everything that needs to be done to restore the South Florida Ecosystem. Rather they provide an overview of the major restoration accomplishments and whether they are proceeding on schedule, indicating whether or not the work of the Task Force member agencies is on track. The objectives, like the projects, are subject to adaptive management and may be modified as new information becomes available or when desired outcomes are not achieved. The Task Force agencies periodically provide updated data to the Task Force, which synthesizes the information for its strategy and biennial reports.

The major projects contributing to each objective are listed in this section of the strategy. If more than one project is required to meet a single objective, then each project's partial contribution is identified. Not all the Task Force projects are listed in this section. However, all are listed in

**Error! Reference source not found.** in Appendix B and all are described in detail in project sheets in Volume 2.

### ***Goal 1: Get the Water Right***

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Water is the lifeblood of the South Florida Ecosystem. The water flows today, however, have been reduced to less than one-third of those occurring in the historic Everglades. The quality of water that does enter the ecosystem has been seriously degraded. Water does not flow at the same times or durations as it did historically, nor can it move freely through the system. The whole South Florida Ecosystem has suffered. The health of Lake Okeechobee is seriously threatened. Many plants and animals that live in South Florida and the Everglades are in danger of becoming extinct because their habitats have been degraded, reduced, or eliminated. Excessive freshwater discharges in the wet season and inadequate flows in the dry season threaten the estuaries and bays that are critical nurseries and home to many fish and wildlife. Urban and agricultural areas are also adversely affected. Water shortages and water restrictions are occurring more frequently in some parts of South Florida.

Getting the water right must address four interrelated factors: the quantity, quality, timing, and distribution of water. More water is not always better. Alternating periods of flooding and drying were vital to the historical functioning of the Everglades Ecosystem. Getting the water right also must recognize the needs of natural systems, urban and rural communities, and agriculture. Waters need to meet applicable water quality standards, including standards to protect the natural functioning of the Everglades and those that ensure the availability of safe drinking water. The right quantity of water, of the right quality, needs to be delivered to the right places and at the right times.

A consensus-building exercise in 1999 with broad public input identified a list of statements that Task Force participants used as a foundation to develop the Task Force strategy. Based on that consensus, the water will be right when the following conditions are met: Natural hydrologic functions are restored in wetland, estuarine, marine, and groundwater systems, while also providing for the water resource needs of urban and agricultural landscapes. Natural variations in water flows and levels are restored without diminishing essential levels of water supply or flood control. Compartmentalization is reduced, and natural patterns of sheet flow are recovered to the maximum extent possible. Water resources accommodate the needs of natural systems, communities, and business. Safe drinking water is available for the people of South Florida. Damage caused to water quality by pollutants and contaminants (such as from agricultural nutrients or urban related pollutants) is eliminated. Water levels and the timing of water deliveries reflect quantities resulting from natural rainfall and are distributed according to natural hydrologic patterns or patterns modified by scientific consensus. Damage to natural and human systems caused by flood and drought is minimized. Groundwater resources are protected from depletion and contamination.

Efforts to achieve goal one must incorporate a process to address concerns of environmental justice and economic equity. The unique cultural and ethnic diversity of South Florida's population, with its strong representation of peoples from all over the world, will require significant efforts on behalf of the restoration partners to ensure that projects are implemented in ways that do not result in disproportionate impacts on any communities. Additional targeted efforts will be required to provide opportunities for socially and economically disadvantaged individuals and small businesses to participate in the implementation of restoration programs and projects. The Task Force and Working Group see this guiding principle as critical to long-term success.



Subgoal 1-A: Get the Hydrology Right (Water Quantity, Timing, and Distribution)

**How This Subgoal Will Be Implemented**

On average 1.7 billion gallons per day (gpd) of water that once flowed through the South Florida Ecosystem is discharged via canals to the ocean or gulf. The CERP and other projects include five programs for recapturing most of this water and redirecting it to sustain natural system functioning and to supplement urban and agricultural water supplies:

*Surface water storage reservoirs.* Surface water storage impoundments and water control structures will allow manipulation of flows in the system to mimic the natural system. A number of water storage facilities are planned north of Lake Okeechobee, in the Caloosahatchee and St. Lucie basins, in the Everglades Agricultural Area, and in Palm Beach, Broward, and Miami-Dade Counties. These areas will encompass approximately 181,300 acres and will have the capacity to store 1.4 million acre-feet of water. Two rock mining areas in Miami-Dade County will be converted to in-ground storage areas.

*Aquifer storage and recovery (ASR).* Subsurface storage will be used to meet remaining water supply needs. The limestone platform that underlies Florida is honeycombed with voids and porous layers of sedimentary rock capable of holding water in storage. Water that currently leaves the ecosystem in canals can be captured, treated, and injected into these aquifers, and held in storage until the water is needed to augment surface storage supplies. The CERP envisions that more than 300 wells will be built to store water 1,000 feet underground in the upper Floridan Aquifer. Pilot testing of this approach in different geologic areas is ongoing. If proven successful, wells will be located around Lake Okeechobee, in the Caloosahatchee Basin, and along the east coast. As much as 1.6 billion gallons a day may be pumped down the wells into underground storage zones for subsequent recovery. Because water does not evaporate when stored underground and less land is required for storage, aquifer storage and recovery has some advantages over surface storage. In particular, water stored in the aquifer can be made available for longer durations in years of severe drought conditions. The stored water will be pumped into the existing surface water delivery system to meet environmental, urban, and agricultural water supply demands. ASR components represented approximately one-fifth of the total CERP costs presented in the USACE 1999 *Central and South Florida Project Comprehensive Review Study*.

*Removing barriers to sheet flow.* Canals, internal levees, and other impediments to sheet flow will be removed or modified to reestablish the natural sheet flow of water through the system. The Kissimmee River Restoration Project will restore approximately 40 square miles of free-flowing river floodplain and associated wetlands, which likely will help improve the quality of water flowing into Lake Okeechobee. The Modified Water Deliveries and Canal-111 projects will restore historic hydrological patterns to the Everglades. Most of the Miami Canal in WCA-3 will be removed, and 20 miles of the Tamiami Trail (U.S. Route 41) will be rebuilt with bridges and culverts, allowing water to flow more naturally into Everglades National Park. In the Big Cypress National Preserve, the levee that separates the preserve from the Everglades will be removed to restore more natural overland water flow.

*Seepage management.* Millions of gallons of groundwater are lost each year as it seeps away from the Everglades towards the east coast, where groundwater levels were lowered by the C&SF Project to allow for development and all human uses. Seepage generally occurs either as underground flow or through levees (the artificial boundaries of the natural system). Three kinds of projects will reduce unwanted water loss and redirect this flow westward to the WCAs, Everglades National Park, and northeast Shark River Slough: (1) adding impervious barriers to the levees to block loss of water; (2) installing pumps near levees to redirect water back into the

Everglades; and (3) holding water levels higher in undeveloped areas east of the protective levee between the Everglades and Palm Beach, Broward, and Miami-Dade Counties.

*Operational changes.* Changes in water delivery schedules will be made in some areas to alleviate extreme fluctuations. Lake Okeechobee water levels will be modified to improve the health of the lake. In other areas, rainfall-driven operational plans will enhance the timing of water flows. Water will be delivered, as facilities are constructed, according to schedules that match natural hydrological patterns as closely as possible. Continued research will improve understanding of the hydrology and how it can be restored while maintaining urban and agricultural water supply and flood control. All efforts in CERP to restore the ecosystem incorporate reviews required by the assurance language of WRDA 2000 (attached as Appendix D) to ensure that existing legal sources of water are not eliminated or transferred until a new source of water supply of comparable quality and quantity is available.

#### **Long-Term Operations and Maintenance Needs**

Effective management of water storage and delivery will require close coordination between the USACE and the SFWMD. Project sponsors will constantly monitor in-place storage and water flows to ensure that the storage and recovery systems are functioning properly. Wells, wellheads, and pumps will require regular maintenance to operate effectively, and long-term operating plans will be developed to ensure continued service.

#### **Factors Affecting Achievement of this Subgoal**

*Population growth.* The population of South Florida is expected to double by 2050, greatly increasing demands on water. Urban water supply demands could increase from approximately one billion gallons of water per day (gpd) to two billion gpd, taxing the limited natural and economic resources of the Task Force participants.

*Funding.* A critical factor is stable and reliable funding for the timely completion of these projects. If the hydrology projects cannot be completed on schedule, the effects can cascade through the restoration effort, blocking successful completion of the water quality subgoal and delaying the habitat restoration and preservation subgoals. Delays can increase costs over the long term and, in some cases, foreclose land acquisition options, thus creating further delays or requiring project design modifications. Increasing demands on the limited natural and financial resources of the Task Force members may affect their ability to achieve their strategic goals.

*Land acquisition.* Many of the surface storage impoundments will be constructed on lands that have yet to be acquired. In some cases, easements are needed for impoundments and/or for canals to connect an impoundment to the system. Willingness of landowners to sell land, funds to exercise land acquisition options, and community acceptance of projects are factors that can affect completion of the objective.

*Natural disasters.* Severe weather, including *el niño* and *la niña* cycles, and natural disasters, such as hurricanes and forest fires, could delay completion of the restoration activities. Impoundment dikes are particularly susceptible to severe rainstorm damage during and immediately after construction. Careful construction can minimize but not eliminate project setbacks and delays due to weather events, such as hurricanes and tropical storms. Extreme weather conditions may also affect the ability to manage and maintain aquifer water storage, given the complexity of the limestone geology of Florida.

*Technical Uncertainties* Although aquifer storage and recovery technology has been used for many years there are some technical uncertainties of using this technology on such a large scale. These uncertainties are being thoroughly researched through the ASR pilot projects currently underway.

**Specific, Measurable Objectives for Achieving this Subgoal**

Three objectives for achieving this subgoal have been adopted by the Task Force:

Provide 1.3 million acre-feet of surface water storage by 2036

Develop aquifer storage and recovery systems capable of storing 1.6 billion gallons per day by 2028

Modify 335 miles of impediments to flow by 2019

The key projects needed to achieve these objectives and the schedule for their implementation are shown in Strategic Plan Table 2.

**Strategic Plan Table 2. Subgoal 1-A: Get the Hydrology Right**

| Milestone Projects<br>(Refer to Appendix B - <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.) |            |                       |                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|------------------------------------------------------------------------------------------------------------------------|
| Objective 1-A.1: Provide 1.3 million acre-feet of surface water storage by 2036                                                                                           | Project ID | Restoration End Point | Project                                                                                                                |
|                                                                                                                                                                           | 2100       | TBD                   | Allapattah Flats*                                                                                                      |
|                                                                                                                                                                           | 1111       | 2005                  | Ten Mile Creek                                                                                                         |
|                                                                                                                                                                           | 1100       | 2009                  | Acme Basin B Discharge                                                                                                 |
|                                                                                                                                                                           | 1102       | 2009                  | Everglades Agricultural Area Storage Reservoir, Phase 1                                                                |
|                                                                                                                                                                           | 1104       | 2013                  | Lake Okeechobee Watershed                                                                                              |
|                                                                                                                                                                           | 1103       | 2014                  | Everglades Agricultural Area Storage Reservoir, Phase 2                                                                |
|                                                                                                                                                                           | 1108       | 2018                  | Bird Drive Recharge Area                                                                                               |
|                                                                                                                                                                           | 1109       | 2019                  | C-43 Basin Storage Reservoir and ASR                                                                                   |
|                                                                                                                                                                           | 1106       | 2020                  | Palm Beach County Agricultural Reserve Reservoir and ASR                                                               |
|                                                                                                                                                                           | 1107       | 2024                  | Site 1 Impoundment and Aquifer Storage and Recovery                                                                    |
|                                                                                                                                                                           | 1101       | 2033                  | Indian River Lagoon South, C-44 Basin Storage Reservoir and C-23/C-24/C-25/Northfork and Southfork Storage Reservoirs* |
|                                                                                                                                                                           | 1110       | 2035                  | Central Lake Belt Storage                                                                                              |
|                                                                                                                                                                           | 1105       | 2036                  | North Lake Belt Storage                                                                                                |
| Objective 1-A.2: Develop aquifer storage and recovery systems capable of storing 1.6 billion gallons per day by 2028                                                      | Project ID | Restoration endpoint  | Project                                                                                                                |
|                                                                                                                                                                           | 1109       | 2019                  | C-43 Basin Storage Reservoir and ASR                                                                                   |
|                                                                                                                                                                           | 1106       | 2020                  | Palm Beach County Agricultural Reserve Reservoir and ASR                                                               |
|                                                                                                                                                                           | 1200       | 2021                  | C-51 Regional Groundwater Aquifer Storage and Recovery                                                                 |
|                                                                                                                                                                           | 1107       | 2024                  | Site 1 Impoundment and Aquifer Storage and Recovery                                                                    |
|                                                                                                                                                                           | 1201       | 2028                  | Lake Okeechobee Aquifer Storage and Recovery                                                                           |
| Objective 1-A.3: Modify 335 miles of impediments to flow by 2019                                                                                                          | Project ID | Restoration End Point | Project                                                                                                                |
|                                                                                                                                                                           | 1305       | 1997                  | Kissimmee Prairie Ecosystem                                                                                            |
|                                                                                                                                                                           | 1304       | 2004                  | East WCA-3A Hydropattern Restoration                                                                                   |
|                                                                                                                                                                           | 1300       | 2008                  | Canal 111                                                                                                              |
|                                                                                                                                                                           | 1307       | 2008                  | Modified Waters Delivery Project                                                                                       |

\* Some Projects have been combined with others since 2002

|  |      |      |                                                        |
|--|------|------|--------------------------------------------------------|
|  | 1306 | 2012 | Kissimmee River Restoration                            |
|  | 1302 | 2018 | Florida Keys Tidal Restoration                         |
|  | 1301 | 2019 | WCA-3 Decompartmentalization and Sheetflow Enhancement |

#### Subgoal 1-B: Get the Water Quality Right

Runoff from agriculture and stormwater from urban areas has polluted areas of the Everglades and Lake Okeechobee and impaired ecological functions in those critical ecosystems. Phosphorus is a major concern, but it is not the only pollution problem. The water quality of the Caloosahatchee River, St. Lucie Estuary, Biscayne Bay, Florida Bay, the Florida Keys, and the nearshore waters off the coasts periodically show signs of significant degradation, including eutrophication, excessive salinity range, and short-term variability and introduction of anthropogenic agricultural or industrial pollutants. In marine systems, exogenous nitrogen appears to be of particular concern. Mercury is also a concern in both freshwater and marine systems in South Florida.

The Task Force is committed to working with the relevant federal, state, and local agencies to ensure that water quality problems like coastal eutrophication are not exacerbated by the altered water management and delivery concurrently with the CERP.

#### How This Subgoal Will Be Implemented

*Everglades Forever Act.* In 1994 the Florida Legislature passed the Everglades Forever Act, which codified measures to improve water quality within the Everglades Protection Area (EPA), defined as the Loxahatchee National Wildlife Refuge, WCAs 2 and 3, and Everglades National Park. One provision establishes the Everglades Construction Project, a series of six stormwater treatment areas (STAs) between the EAA and the natural areas to the south. The main purpose of these treatment areas is to reduce the phosphorus loads in waters entering the EPA. Additionally, the state uses regulatory programs, and landowners implement best management practices, to reduce phosphorus from urban and agricultural discharges. These programs and practices have reduced the phosphorus levels discharged from the EAA and neighboring basins into the Everglades. However, the final standards have not yet been met. A plan of construction projects, source controls, and continuing scientific investigations has been developed to by the SFWMD to ensure that discharges from all basins impacting the Everglades meet state water quality standards. This plan is referred to as the *Long-Term Plan*.

In March 2003 the SFWMD adopted a conceptual plan for achieving long-term water quality goals the district strategy for meeting water quality standard. In July 2003 the Florida Department of Environmental Protection (DEP) proposed a rule establishing a long-term geometric mean of 10 ppb with associated natural variability as the numeric phosphorus criterion for class III waters in the EPA. The rule also establishes moderating provisions for permits authorizing discharges into the EPA in compliance with water quality standards, including the numeric phosphorus criterion and a method for determining achievement of the numeric phosphorus criterion. The rule also establishes moderating provisions authorizing discharges above the criterion, provided measures are taken to implement the best available phosphorus reduction technologies and a compliance methodology for determining achievement of the criterion.

*Tribal water quality standards.* In May 1999 the Environmental Protection Agency (EPA) approved the 10 micrograms per liter (10 µg/l) total phosphorus water column quality standard adopted by the Miccosukee Tribe of Indians of Florida. The tribe, which is treated as a state for purposes of the Clean Water Act, adopted water quality standards to protect the tribal Everglades under their jurisdiction on the Federal Reservation. The phosphorus standard applies to class III-A waters within tribal boundaries, defined by the tribe as tribal water bodies used for "fishing, frogging, recreation (including air boating), and the propagation and maintenance of a healthy, well-balanced population of fish and other aquatic life and wildlife...primarily designated for preservation of native plants and animals of the natural Everglades Ecosystem." While tribal waters on the Federal Reservation are located in the area of the Everglades which has median background total phosphorus concentrations ranging from 4 to 10 µg/l (often lower than the standard), the EPA determined that at present no data suggest that phosphorus concentrations less than or equal to 10 µg /l cause changes in flora or fauna. Citing peer reviewed publications and technical reports, the EPA determined that the 10 µg/l standard was a "scientifically defensible value which is not overly protective" and will protect the class III-A designated use. It also states, however, that additional Everglades data are still being collected, and if further studies show that 10 µg/l is not protective of class III-A waters, then the tribe should revise its standard as necessary.

*Best Management Practices.* The NRCS provides technical assistance on a voluntary basis to private landowners and operators, Indian Tribes and others for the planning of conservation practices and installation of needed conservation management systems with the goal of achieving natural resource sustainability. Participants associated with animal feeding, livestock grazing operations, and fruit and crop production within the South Florida Ecosystem are helped to implement practices that improve nutrient management, water quality, and water conservation. The Environmental Quality Incentives Program provides farmers and ranchers financial and technical assistance to install or implement structural and management practices on agricultural lands that will improve or maintain the health of natural resources in the area including water quality.

*Water management plans.* Monitoring and research will be required before outlining additional plans for improving water quality in South Florida's lakes, wetlands, estuaries, and bays. Consequently, not all the projects and outputs needed to achieve this subgoal have been identified.

Section 303(d) of the federal Clean Water Act requires states to submit lists of surface waters that still do not meet applicable water quality standards (impaired waters) after implementation of technology-based effluent limitations, and to establish total maximum daily loads (TMDLs) for these waters on a prioritized schedule. For those waters deemed impaired, the FDEP, in conjunction with the SFWMD, the Florida Department of Agriculture and Consumer Services (FDACS), and other appropriate entities, will develop TMDLs. The TMDL will establish the maximum amount of a pollutant that a water body can assimilate without impairing the designated use. Currently there are 154 water segments listed on the state's 303(d) list within the boundaries of the SFWMD.

The state is transitioning to a watershed management program that is based on a five-phase cycle. During the first phase, the water quality data for each basin will be assessed, and waters determined to be potentially impaired will be identified. In phase two intensive monitoring will be conducted to supply data needed to either verify a suspected impairment or (in cases where the impairment has previously been verified) to model the impaired waters and generate TMDLs. During the third phase, TMDLs for impaired waters will be calculated and allocated to individual point sources and the major categories of nonpoint sources. After TMDLs are adopted, a

consensus-based basin management action plan, which will include a TMDL implementation plan, will be developed during the fourth phase.

The fifth and final phase will involve the implementation of the proposed management plan, including securing funding, passing local or state legislation, and writing permits that reflect the limits of the TMDLs. Implementation of TMDLs may involve any combination of regulatory, nonregulatory, or incentive-based actions that attain the necessary reduction in pollutant loading. Nonregulatory or incentive-based actions may include development and implementation of best management practices, pollution prevention activities, and habitat preservation or restoration. Regulatory actions may include issuance or revision of wastewater, stormwater, or environmental resource permits to include permit conditions consistent with the TMDL. Once these plans have been adopted and implemented, progress will be monitored until waters are eventually certified as meeting water quality standards.

It will take two rotations through the state to assess all the waters on the list. The first five-year cycle will cover those waters with a high priority, while those with a lower priority will be addressed in the second rotation.

The FDEP will provide annual updates to the 303(d) list. Any new water bodies identified as being impaired by pollutants will be added to the list and given a priority for TMDL development, normally as part of the next five-year cycle. In addition, each existing TMDL will be reevaluated as part of the next five-year cycle to determine progress toward meeting water quality standards and whether the TMDL needs to be revised.

Lake Okeechobee Protection Program. The state has embarked on a program to establish TMDLs for the Lake Okeechobee watershed and lake. The Florida DEP adopted a phosphorus TMDL for Lake Okeechobee in May 2001. Phosphorus TMDLs for the tributaries in the watershed are being developed following the schedule associated with the DEP watershed management approach. The SFWMD, with participation from the Florida DACS and the DEP has implemented the Lake Okeechobee Protection Program to clean up nutrient discharges from agricultural and urban lands north of the lake within the lake's watershed. Coordinating agencies in the Lake Okeechobee Protection Plan incorporated an outline of the remaining actions needed to achieve the Lake Okeechobee TMDL adopted in 2001.

*Florida Keys National Marine Sanctuary Water Quality Protection Program.* The EPA and the Florida DEP conduct a comprehensive water quality monitoring and research program aimed at correcting point and nonpoint sources of water pollution within the Florida Keys National Marine Sanctuary. The Water Quality Protection Program, initiated in 1996, is the first such program developed for a national marine sanctuary. All state waters within the sanctuary boundary were designed a no-discharge zone in 2002.

"Comprehensive Integrated Water Quality Feasibility Study. The Comprehensive Integrated Water Quality Feasibility Study is intended to serve as a framework for integrating water quality restoration targets for South Florida water bodies into future planning, design and construction activities included in the CERP. The RECOVER team has developed regionally specific monitoring plans that include an extensive set of water quality parameters of ecological or regulatory concern. They have yet to determine whether or not additional systemwide water quality monitoring is necessary. The SFWMD and USCOE have recently prioritized the projects identified in the CERP. As a result of this prioritization the USCOE and DEP (the local sponsor) have decided to postpone this Feasibility Study. At this point in time they have not decided when and how they will eventually implement the Study."

**Comment [LF1]:** Inserted here – was missing in strategy but reported on as progress in Biennial input

**Deleted:** *Comprehensive Integrated Water Quality Feasibility Study.* The SFWMD and the USACE have recently completed a prioritization process for projects identified in the CERP. As a result of this process, the USACE and the Florida DEP have decided to postpone the Water Quality Feasibility Study. At this point in time, the department has not decided when and how it will move forward with the study.

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**Comment [LF2]:** 81804 New text per Conference Call Discussion from Peter Ortner

### Factors Affecting Achievement of the Subgoal

*Natural disasters.* Severe weather, including *el niño* and *la niña* cycles, and natural disasters, such as hurricanes and forest fires, will adversely affect water quality.

*Land acquisition.* Many of the stormwater treatment areas will be constructed on lands that have yet to be acquired. Willing land sellers, funds to exercise land acquisition options, and community acceptance of projects are factors that can affect completion of the objective.

*Funding.* Funding is always a critical factor. If the water quality projects cannot be completed on schedule, the effects can cascade through the restoration effort, delaying progress toward meeting the habitat restoration and preservation subgoals.

### Specific, Measurable Objectives for Achieving this Subgoal

Two objectives for achieving this subgoal have been adopted by the Task Force:

Construct 69,000 acres of stormwater treatment areas by 2035

Prepare plans, with strategies and schedules for implementation, to comply with total maximum daily loads for 100 percent of impaired water bodies by 2011

The key projects needed to achieve these objectives and the schedule for their implementation are shown in Strategic Plan Table 3.

**Strategic Plan Table 3. Subgoal 1-B: Get the Water Quality Right**

| Milestone Projects<br>(Refer to Appendix B <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.)     |            |                       |                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Objective 1-B.1:<br>Construct 69,000 acres of stormwater treatment areas by 2035                                                                                            | Project ID | Restoration End Point | Project                                                                                                                                   |
|                                                                                                                                                                             | 1508       | 2003                  | STA-1 West Works and Outflow Pump Station                                                                                                 |
|                                                                                                                                                                             | 1509       | 2004                  | STA-2 Works and Outflow Pump Station                                                                                                      |
|                                                                                                                                                                             | 1511       | 2005                  | STA-5 Works                                                                                                                               |
|                                                                                                                                                                             | 1510       | 2005                  | STA-3/4 Works                                                                                                                             |
|                                                                                                                                                                             | 1414       | 2005                  | Henderson Creek/Belle Meade Restoration                                                                                                   |
|                                                                                                                                                                             | 1506       | 2006                  | Lake Okeechobee Water Retention/Phosphorus Removal                                                                                        |
|                                                                                                                                                                             | 1512       | 2006                  | STA-6                                                                                                                                     |
|                                                                                                                                                                             | 1104       | 2009                  | Lake Okeechobee Watershed                                                                                                                 |
|                                                                                                                                                                             | 1502       | 2010                  | Miccosukee Tribe Water Management Plan                                                                                                    |
|                                                                                                                                                                             | 1501       | 2011                  | Broward County WPA - C-9 STA and Impoundment and Western C-11 Diversion Impoundment and Canal and WCAs 3A and 3B Levee Seepage Management |
|                                                                                                                                                                             | 1513       | 2014                  | West Palm Beach Canal (C-51) and STA-1E                                                                                                   |
|                                                                                                                                                                             | 1503       | 2014                  | North Palm Beach County                                                                                                                   |
|                                                                                                                                                                             | 1505       | 2014                  | Caloosahatchee Back pumping with Stormwater Treatment                                                                                     |
|                                                                                                                                                                             | 1500       | 2015                  | Big Cypress/L-28 Interceptor Modifications                                                                                                |
|                                                                                                                                                                             | 1110       | 2035                  | Central Lake Belt Storage Area                                                                                                            |
| Objective 1-B.2: Prepare plans, with strategies and schedules for implementation, to comply with total maximum daily loads for 100 percent of impaired water bodies by 2011 | Project ID | Restoration Endpoint  | Project                                                                                                                                   |
|                                                                                                                                                                             | 1600       | TBD                   | Total Maximum Daily Load for South Florida                                                                                                |

## ***Goal 2: Restore, Preserve, and Protect Natural Habitats and Species***

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Before European settlement the natural habitats of South Florida covered an area of about 18,000 square miles. This enormous space encompassed a rich mosaic of ponds, sloughs, sawgrass marshes, hardwood hammocks, and forested uplands. In and around the estuaries, freshwater mingled with salt to create habitats supporting mangroves and nurseries for wading birds and fish. Beyond, nearshore islands and coral reefs provided shelter for an array of terrestrial and marine life. The vast expanses of habitat were large enough to support far-ranging animals, such as the Florida panther, and super colonies of wading birds, such as herons, egrets, roseate spoonbills, ibis, and wood storks. For thousands of years this resilient ecosystem withstood and repeatedly recovered from the effects of hurricanes, fires, severe droughts, and floods, retaining some of the greatest biodiversity found on earth.

Today the Florida panther and sixty-eight other animal or plant species are listed by the FWS as threatened or endangered. Many additional species are of special concern to the State of Florida. Super colonies of wading birds no longer nest in the Everglades. The wetland habitats that supported these species have been reduced by half, fragmented by roads, levees, and other structures, dewatered by canals, and degraded by urban and agricultural pollutants. The marine environments of the bays and coral reefs have suffered a similar decline. Altered biological communities are being overrun by invasive exotic plants and animals capable of outcompeting native species and habitats. Exotic plants now make up approximately one-third of the total plant species known in Florida. The Florida Exotic Pest Plant Council has identified 125 of these as serious risks to Florida's natural areas and its threatened and endangered native plants and animals.

A combination of connectivity and spatial extent created the range of habitats and supported the levels of productivity needed for the historic diversity and abundance of native plants and animals. The original Everglades and other South Florida environments formed hydrologically integrated systems from boundary to boundary. Restoring natural habitats and species will require reestablishing the hydrologic and other conditions conducive to native communities and piecing together large enough areas of potential habitat. Exotic species must be managed, and the escape of new exotics must be prevented. Then it will require time for native plants and animals to reestablish populations and communities. The intended result will be self-sustaining populations of diverse native animal and plant species. This must take into account that populations that have adapted to current conditions may be impacted.

A consensus-building exercise in 1999 with broad public input identified a list of statements that Task Force participants used as a foundation to develop the Task Force strategy. Based on that consensus, the habitats will be restored, preserved, and protected when the following conditions are met: The diversity, abundance, and behavior of native South Florida animals and plants and their terrestrial and aquatic habitats are characteristic of predrainage conditions. The spatial extent of wetlands and other natural systems is sufficient to support the historic functions of the greater Everglades Ecosystem. Important wildlife corridors are identified, enhanced, and preserved. Endangered and other federal and state listed species recover self-sustaining levels, and sufficient habitats for maintaining healthy numbers are restored and protected. Invasive exotic plant and animal species are substantially eliminated or reduced to manageable levels.

Efforts to achieve goal 2 must incorporate a process to address concerns of environmental justice and economic equity. The unique cultural and ethnic diversity of South Florida's population, with its strong representation of peoples from all over the world, will require significant efforts on behalf of the restoration partners to ensure that projects are implemented in ways that do not result in disproportionate impacts on any communities. Additional targeted efforts will be



required to provide opportunities for socially and economically disadvantaged individuals and small businesses to participate in the implementation of restoration programs and projects. The Task Force and Working Group see this guiding principle as critical to long-term success.

#### **Subgoal 2-A: Restore, Preserve, and Protect Natural Habitats**

##### **How This Subgoal Will Be Implemented**

*Land acquisition.* Land acquisition is critical to South Florida ecosystem restoration efforts. Land is needed to preserve habitat for native plants and animals and to act as a buffer to existing natural areas. Land is also needed for water quality treatment areas, water storage reservoirs, and aquifer recharge areas that will help restore natural hydrology. Federal, state, and local governments have all played important roles in land acquisition. As of June 2004, state and federal agencies have acquired 4.9 million acres of land for habitat conservation purposes, and the Task Force interagency Land Acquisition Team has identified an additional 881,736 acres for acquisition by 2015. The most efficient use of resources may not be fee simple purchase of land, nor is it always desirable. Many alternative tools to meet restoration land use needs are being implemented to maximize the benefits of these limited resources. The Task Force supports the use of less than fee acquisitions or the use of other tools. Some examples of the tools being used include:

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- *Easements*
- *Temporary Lease Agreements*
- *Mitigation Banks*
- *Public Private Partnerships*

Over the past several decades, the federal government has acquired title to lands for conservation and public enjoyment of national parks, national preserves, and national wildlife refuges. Using existing land use plans and priorities, and based upon the availability of annual appropriations, federal land managers will continue to acquire lands within authorized boundaries of existing national wildlife refuges and national parks and preserves in the South Florida Ecosystem. The completion of these areas will provide additional habitat for threatened, endangered, and other species, as well as recreational opportunities for the people of South Florida. The federal government also has provided financial support to state land acquisition programs, such as the \$200 million provided by the 1996 Farm Bill for acquisition in support of ecosystem restoration. Based upon the availability of annual appropriations, federal land managers will continue to look for opportunities to assist the State of Florida in preserving the highest priority areas for implementation of the CERP.

The Florida Forever Program is Florida's primary land acquisition program. It is a ten-year program that will raise approximately \$3 billion (\$300 million per year) for land acquisition. The program identifies and acquires lands from voluntary sellers through a process described under chapters 259 and 373 of the Florida Statutes. The state also partners with local governments and other entities to identify and jointly acquire conservation lands. All of the state laws governing the acquisition of land with public funds for the purposes of conservation, recreation, or fish and wildlife management ensure that the public will be provided access.

In recent years local governments have initiated, voted, and approved land acquisition programs for hundreds of millions of dollars that are helping protect and restore the South Florida Ecosystem. Interest is growing for many counties to undertake similar initiatives. These programs have the potential to complement and support the CERP as well as to foster compatibility of the built and natural systems.

State Florida Forever lands, federal parks and preserves, state water preserve areas, county and private conservation lands, conservation easements and other agreements with private landowners, and other lands acquired for South Florida Ecosystem restoration will help expand and connect a mosaic of upland, wetland, coastal, and marine habitats that will support the recovery of many currently imperiled species. When completed, these efforts will yield a total of approximately 5.8 million acres for conservation and habitat protection. These lands also provide opportunities for water supply enhancement; natural-resource based outdoor recreation, and environmental awareness and education to the state's residents and visitors.

*Protection of critical habitat for threatened and endangered species.* As part of the South Florida Ecosystem restoration initiative, in 1995 the FWS was directed to prepare a comprehensive, ecosystemwide strategy (the MSRP) to recover threatened and endangered species and to restore and maintain the extremely high biodiversity of native plants and animals in the upland, wetland, estuarine, and marine communities of the South Florida Ecosystem.

The MSRP addresses the recovery needs of South Florida's sixty-nine federally listed threatened and endangered species. A major section of that plan describes twenty-three of the natural vegetative communities in South Florida and identifies management actions needed to restore South Florida's ecosystem. Protecting critical habitat for threatened and endangered species will involve major coordination between the aggressive land acquisition programs of the state and the land acquisition plans for the national wildlife refuge system and the national park system. The Task Force has appointed a Multi-Species/Ecosystem Recovery Implementation Team (MERIT) to prioritize actions included in the recovery plan.

*Wetlands enhancement.* The CERP calls for removing barriers to sheetflow, restoring more natural hydroperiods to wetlands, and providing natural system water flows to coastal waters. These projects will restore hydrological connections to large portions of the remnant Everglades marsh, improve water quality, and increase the extent of wetlands, thus enhancing fish and wildlife habitat. Habitat heterogeneity will also be improved as upland and transitional areas experience more natural hydroperiods. Modeling of CERP project components shows that almost 2.4 million acres will be restored and enhanced.

Wetlands enhancement is also achieved through the Wetlands Preserve Program, a voluntary conservation program funded by the Farm Bill through which the USDA provides incentive payments and cost-sharing to restore, enhance, and protect degraded wetlands on agricultural lands. (An objective for this program is included under subgoal 3-A, "use and manage land in a manner compatible with ecosystem restoration.")

*Restoration and preservation of coral reefs.* Other major efforts to restore and preserve habitat involve the designation of an ecological reserve and a research natural area to protect critical coral reef communities in the western portion of the Florida Keys National Marine Sanctuary and Dry Tortugas National Park. The Tortugas region in the Straits of Florida has near-pristine marine resources, including one of the best-developed tropical coral reef systems on the continent. It is the epicenter of marine productivity for the region. Ensuring its long-term protection and appropriate public use will require cooperation among multiple and overlapping jurisdictions, including the U.S. Departments of Commerce and Interior and the State of Florida. The Florida Keys National Marine Sanctuary's Tortugas Ecological Reserve fully protects 151 square nautical miles of coral reefs and associated communities. The Dry Tortugas National Park's research natural area will protect an additional 46 nautical miles of reefs and marine habitats. Combined, these two areas will encompass 197 square nautical miles, protecting more

than 10 percent of the coral reefs in the Florida Keys. Reefs elsewhere in South Florida have not received any significant protection to date.

#### **Factors Affecting Achievement of this Objective**

Progress in acquiring lands needed for habitat protection will depend upon the availability of land from willing sellers, land values, the rate of development, and annual federal and state legislative appropriations.

#### **Specific, Measurable Objectives for Achieving this Subgoal**

Three objectives for achieving this subgoal have been adopted by the Task Force:

Complete acquisition of 5.8 million acres of land identified for habitat protection by 2015

Protect 20 percent of the coral reefs by 2010

Improve habitat quality for 2.4 million acres of natural areas in South Florida

The key projects needed to achieve these objectives and the schedule for their implementation are shown in Strategic Plan Table 4.

**Strategic Plan Table 4. Subgoal 2-A: Restore, Preserve, and Protect Natural Habitats**

| Milestone Projects<br>(Refer to Appendix B - <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.) |                      |                  |                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|----------------------------------------------|
| Objective 2-A.1: Complete acquisition of 5.8 million acres of land identified for habitat protection by 2015                                                              | Project ID           | Project Endpoint | Project Name                                 |
|                                                                                                                                                                           | STATE/SFWMD PROJECTS |                  |                                              |
|                                                                                                                                                                           | 2100                 |                  | Allapattah Flats/Ranch                       |
|                                                                                                                                                                           | 2101                 |                  | Atlantic Ridge Ecosystem                     |
|                                                                                                                                                                           | 2102                 |                  | Babcock Ranch                                |
|                                                                                                                                                                           | 2103                 |                  | Barfield Farms                               |
|                                                                                                                                                                           | 2104                 |                  | Belle Meade                                  |
|                                                                                                                                                                           | 2105                 |                  | Big Bend Swamp/Holopaw Ranch                 |
|                                                                                                                                                                           | 2106                 |                  | Biscayne Coastal Wetlands                    |
|                                                                                                                                                                           | 2107                 |                  | Bombing Range Ridge                          |
|                                                                                                                                                                           | 2108                 |                  | Caloosahatchee Ecoscape                      |
|                                                                                                                                                                           | 2109                 |                  | Catfish Creek                                |
|                                                                                                                                                                           | 2111                 |                  | Charlotte Harbor Estuary/Flatwoods/Cape Haze |
|                                                                                                                                                                           | 2112                 |                  | Corkscrew Reg. Ecosystem Watershed (CREW)    |
|                                                                                                                                                                           | 2114                 |                  | Coupon Bight/Key Deer/Big Pine Key           |
|                                                                                                                                                                           | 2115                 |                  | Cypress Creek/Trail Ridge                    |
|                                                                                                                                                                           | 2172                 |                  | Cypress Creek/Loxahatchee                    |
|                                                                                                                                                                           | 2185                 |                  | Devils Garden                                |
|                                                                                                                                                                           | 2117                 |                  | East Coast Buffer/Water Preserve Areas       |
|                                                                                                                                                                           | 2118                 |                  | Estero Bay                                   |
|                                                                                                                                                                           | 2119                 |                  | Everglades Agricultural Area/Talisman        |
|                                                                                                                                                                           | 2120                 |                  | Fakahatchee Strand                           |
|                                                                                                                                                                           | 2121                 |                  | Fisheating Creek                             |
|                                                                                                                                                                           | 2122                 |                  | Florida Keys Ecosystem                       |
|                                                                                                                                                                           | 2123                 |                  | Frog Pond/L31N                               |
|                                                                                                                                                                           | 2173                 |                  | Grassy Island Ranch                          |
|                                                                                                                                                                           | 2174                 |                  | Half Circle L Ranch                          |
|                                                                                                                                                                           | 2175                 |                  | Hen Scratch Ranch                            |
|                                                                                                                                                                           | 2124                 |                  | Indian River Lagoon Blueway                  |
|                                                                                                                                                                           | 2125                 |                  | Juno Hills /Dunes                            |
|                                                                                                                                                                           | 2176                 |                  | Jupiter Ridge                                |

| Milestone Projects<br>(Refer to Appendix B - <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.) |                  |                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------|
| Project ID                                                                                                                                                                | Project Endpoint | Project Name                                         |
| 2127                                                                                                                                                                      |                  | Kissimmee River (Lower Basin)*                       |
| 2128                                                                                                                                                                      |                  | Kissimmee River (Upper Basin)*                       |
| 2126                                                                                                                                                                      |                  | Kissimmee-St. Johns River Connector                  |
| 2129                                                                                                                                                                      |                  | Lake Wales Ridge Ecosystem                           |
| 2132                                                                                                                                                                      |                  | Loxahatchee Slough                                   |
| 2133                                                                                                                                                                      |                  | McDaniel Ranch                                       |
| 2134                                                                                                                                                                      |                  | Miami Dade County Archipelago                        |
| 2135                                                                                                                                                                      |                  | Model Lands Basin                                    |
| 2138                                                                                                                                                                      |                  | North Fork of the St. Lucie River                    |
| 2139                                                                                                                                                                      |                  | North Key Largo Hammocks                             |
| 2140                                                                                                                                                                      |                  | North Savannas                                       |
| 2141                                                                                                                                                                      |                  | Okaloacoochee Slough                                 |
| 2142                                                                                                                                                                      |                  | Okeechobee Battlefield                               |
| 2143                                                                                                                                                                      |                  | Osceola Pine Savannas                                |
| 2144                                                                                                                                                                      |                  | Pal-Mar                                              |
| 2145                                                                                                                                                                      |                  | Panther Glades                                       |
| 2146                                                                                                                                                                      |                  | Paradise Run                                         |
| 2147                                                                                                                                                                      |                  | Parker-Poinciana/Lake Hatchineha Watershed           |
| 2148                                                                                                                                                                      |                  | Pineland Site Complex                                |
| 2178                                                                                                                                                                      |                  | Ranch Reserve                                        |
| 2149                                                                                                                                                                      |                  | Rookery Bay                                          |
| 2150                                                                                                                                                                      |                  | Rotenberger/Holey Land Tract                         |
| 2151                                                                                                                                                                      |                  | Shingle Creek                                        |
| 2152                                                                                                                                                                      |                  | Six Mile Cypress I & II                              |
| 2154                                                                                                                                                                      |                  | South Savannas                                       |
| 2155                                                                                                                                                                      |                  | Southern Glades                                      |
| 2156                                                                                                                                                                      |                  | Southern Golden Gate Estates                         |
| 1508-1512                                                                                                                                                                 |                  | STA 1 W, 2, 3/ 4, 5 and 6                            |
| 2158                                                                                                                                                                      |                  | Twelve Mile Slough                                   |
| 2181                                                                                                                                                                      |                  | Upper Econ Mosaic                                    |
| 2159                                                                                                                                                                      |                  | Upper Lakes Basin Watershed (ULBW)                   |
| 2160                                                                                                                                                                      |                  | WCAs 2 and 3                                         |
| STATE COMPLETED PROJECTS                                                                                                                                                  |                  |                                                      |
| 2110                                                                                                                                                                      |                  | Cayo Costa Island                                    |
| 2113                                                                                                                                                                      |                  | Corkscrew Regional Mitigation Bank                   |
| 2116                                                                                                                                                                      |                  | Dupuis Reserve                                       |
| 1305                                                                                                                                                                      |                  | Kissimmee Prairie                                    |
| 2130                                                                                                                                                                      |                  | Lake Walk-In-Water                                   |
| 2131                                                                                                                                                                      |                  | Loxahatchee River Land Acquisition                   |
| 2137                                                                                                                                                                      |                  | Nicodemus Slough                                     |
| 2153                                                                                                                                                                      |                  | South Fork St. Lucie River Land Acquisition          |
| 1513                                                                                                                                                                      |                  | STA 1 E                                              |
| 1111                                                                                                                                                                      |                  | Ten Mile Creek                                       |
| 2157                                                                                                                                                                      |                  | Tibet-Butler Preserve                                |
| 2161                                                                                                                                                                      |                  | Yamato Scrub                                         |
| FCT, STATE PARKS, & WMA'S                                                                                                                                                 |                  |                                                      |
|                                                                                                                                                                           |                  | State Florida Communities Trust Lands                |
|                                                                                                                                                                           |                  | State Park Lands                                     |
|                                                                                                                                                                           |                  | State Wildlife Management Areas                      |
| FEDERAL CONSERVATION LANDS                                                                                                                                                |                  |                                                      |
| 2162                                                                                                                                                                      |                  | A.R.M. Loxahatchee NWR                               |
| 2164                                                                                                                                                                      |                  | Big Cypress National Preserve Addition               |
| 2163                                                                                                                                                                      |                  | Big Cypress National Preserve                        |
| 2165                                                                                                                                                                      |                  | Biscayne National Park                               |
| 2166                                                                                                                                                                      |                  | Crocodile Lake NWR                                   |
| 2167                                                                                                                                                                      |                  | East Everglades Addition to Everglades National Park |
| 2169                                                                                                                                                                      |                  | Florida Panther NWR                                  |
| 2168                                                                                                                                                                      |                  | Florida Keys NWR                                     |
| 2170                                                                                                                                                                      |                  | Hobe Sound NWR                                       |
| 2171                                                                                                                                                                      |                  | J. N. Ding Darling NWR                               |

| Milestone Projects<br>(Refer to Appendix B - <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.) |            |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                           | Project ID | Project Endpoint | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Objective 2-A.2: Protect 20 percent of the coral reefs by 2010                                                                                                            | Project ID | Project Endpoint | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                           |            | 2004             | Florida Keys National Marine Sanctuary Zoning Action Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Objective 2-A.3: Improve habitat quality for 2.4 million acres of natural areas in South Florida.                                                                         | Project ID | Project End Date | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                           |            |                  | <i>Note – The April 1999 USACE C&amp;SF Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement</i> included an extensive environmental evaluation of habitat units that would be improved through implementation of the CERP projects. Table 7-18 in this publication identifies in detail which projects are anticipated to achieve this objective. However, appropriate measures by project are currently being developed through the establishment of interim goals. There are some projects included in our tracking matrix that exemplify how this objective will be achieved. |

### Subgoal 2-B: Control Invasive Exotics

The MSRP identifies the control of exotic species as integral to the restoration of the ecosystem and to the recovery of threatened and endangered and other imperiled species. Some invasive exotic plants have spread in natural areas to the extent that the native plant and animal communities are being replaced. The most widespread and serious exotic plants are listed below, along with the extent of their current infestations.

#### How This Subgoal Will Be Implemented

*Invasive exotic plant management strategies.* In 1993 the Florida Legislature charged the Florida DEP with establishing a plan to control invasive exotic plants on public conservation lands (§369.252, *Florida Statutes*). The DEP Bureau of Invasive Plant Management has developed a comprehensive interagency strategy for elimination or control of the highest priority species and management to control and minimize the spread of other pest plant species.

The Noxious Exotic Weed Task Team established by the Task Force has completed an assessment and strategy, called *Weeds Won't Wait*, for managing invasive exotic plants and is working with all the agencies to implement the strategy. The following three actions included in that strategy are the highest priorities for ecosystem restoration. Other actions are still being developed and will be incorporated into updates of the implementation plan based on the *Weeds Won't Wait* strategy.

*Management Plans.* Comprehensive management plans, when adequately funded and implemented, have provided successful control of invasive exotic plants. These plans offer the advantage of replacing piecemeal efforts to manage exotic plants – typically by controlling them on individual sites or by controlling only one or a few species in broader regions--with coordinated multi-agency programs that integrate invasive plant management activities, organizations, priorities, and resources statewide.

Six species in Florida (melaleuca, Brazilian pepper, Old World climbing fern, hydrilla, water lettuce, and water hyacinth) already have statewide species-based management plans. More than

twenty exotic plants need urgent attention, and developing plans for just the top twenty will take several years. Plans must be developed for each species because each has species-specific characteristics (biology, method of reproduction, life form, etc.) that need to be addressed.

The Florida DEP has developed and is implementing the Upland Invasive Exotic Plant Management (Upland Weeds) Program. This is a statewide strategy to coordinate the efforts of federal, state, and local agencies and nongovernmental organizations in prioritizing needs and developing the methods, research, public education, technology transfer, oversight, and funding needed to conduct an efficient and cost-effective statewide maintenance control program for the control of upland weeds.

*Maintenance control.* Maintenance control is defined in the Florida Statutes as “a method for the control of exotic plants in which control techniques are utilized in a coordinated manner on a continuous basis in order to maintain the plant population at the lowest feasible level” (F.S.369.22). Many techniques are used in an integrated approach and they include mechanical removal, chemical treatment, and biological controls. The three major aquatic species (hydrilla, water hyacinth, and water lettuce) are currently under a maintenance control program for Florida’s 1.25 million acres of public water bodies. Achieving maintenance control for melaleuca is well underway through mechanical and chemical treatment. In 1993 the SFWMD estimated more than 252,008 acres of melaleuca within its boundaries (melaleuca also occurs outside the district). Of these total acres 52 percent were public lands and 48 percent private lands. In 2002 the estimated acreage was 154,423 acres, of which 22 percent were public lands. The decrease of 97,071 acres has been made possible by funding from many agencies, especially the Florida DEP and the SFWMD.

The state is funding research to determine the best approaches for chemical treatment and biological control of Brazilian pepper and Old World climbing fern. Although the climbing fern has only recently been recognized as a serious ecological threat, since 1998 the state has expended over \$6 million to control 32,000 acres of infestations.

Plans for other priority species need to be developed and incorporated into the state’s multi-agency management framework and invasive exotic plant implementation plan and strategy.

The Florida DEP and the NPS have jointly implemented Exotic Plant Management Teams for Florida natural areas. An additional team for national wildlife refuges is being planned and funded by the FWS. These teams are trained to identify and remove invasive exotic plants and to help the land-managing agencies bring the species under maintenance control.

*Prevention.* The reasons some species become invasive and some ecosystems seem more readily invaded are not well understood. However, if a species becomes widely invasive it is difficult and expensive to manage. Preventing the introduction of invasive species is the only absolute means to control them, but absolute prohibitions and exclusions are impractical. An early warning program for potentially invasive species, a risk assessment for evaluating possible invasiveness prior to introduction, methods for early detection of incipient populations of new species, predictive tools to assist in determining where plants may invade, and the ability to eradicate incipient populations are needed. The Federal Interagency Committee for the Management of Noxious Exotic Weeds is planning a national early-warning information system for invasive exotic plants.

### Long-Term Operations and Maintenance Needs

Weed management is like any other long-term program in that sufficient funds must be available on a continuous basis to achieve and then sustain maintenance control. If resources necessary to support management drop below the maintenance level requirement, the species will expand and invade to pre-control levels, and the program must start from zero again. The only exception is when adequate maintenance control is being achieved exclusively through biological control organisms and even in those instances, minimal monitoring is needed to ensure that the biocontrol organisms are continuing to work. Discontinuing funding once maintenance control has been achieved is a problem that has continually plagued invasive species management programs nationally.

### Factors Affecting Achievement of this Subgoal

*Management complexity* The control programs for water hyacinth, water lettuce, and hydrilla have been successful because good management plans were developed for each species that included prioritizing sites for control, assessing the extent of infestations, directing essential research to understand the biology of the species, and specifying proven control techniques. The plans had multi-agency coordination and adequate funding.

To ensure success in bringing other high priority species under maintenance control, agencies will need to build upon the foundation of coordination and cooperation that has been established as part of their collective planning and control efforts to date. Collective efforts sufficient to manage invasive species throughout Florida will require formal agreements supporting the multi-agency approach and the formal designation of a lead agency to direct cooperative planning, project integration, and integrated budgets and resource requests. Identifiable elements from the strategies developed by the Florida DEP and the Task Force NEWTT need to be integrated to expand policy setting, planning, prioritization, funding, and management to the ecosystem level.

*Interface with infested landscapes.* Continuing degradation of the natural environment may enhance the spread or rate of spread of exotic species. Adjacent landowners will impact the success of controlling exotics if these lands remain infested or if the landowners are not interested in land acquisition.

*Importation of new exotics.* The unregulated importation of new plant species continues to increase the potential for infestations of exotic plants.

### Specific, Measurable Objectives for Achieving this Subgoal

Three objectives for achieving this subgoal have been adopted by the Task Force:

- Coordinate the development of management plans for the top twenty South Florida invasive exotic plant species by 2011

- Achieve maintenance control of Brazilian pepper, melaleuca, Australian pine, and Old World climbing fern in South Florida's public conservation lands by 2020

- Complete an invasive exotic plant species prevention, early detection, and eradication plan by 2005

The key projects needed to achieve these objectives and the schedule for their implementation are shown in Strategic Plan Table 5.

Strategic Plan Table 5. Subgoal 2-B: Control Invasive Exotic Plants

| Milestone Projects<br>(Refer to Appendix B - <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.)      |            |                  |                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------|------------------------------------------------------------------------------------------------------------------------|
| Objective 2-B.1: Coordinate the development of management plans for the top twenty South Florida invasive exotic plant species by 2011                                         | Project ID | Project Endpoint | Project Name                                                                                                           |
|                                                                                                                                                                                | 2500       | 2011             | Management plans for melaleuca, Brazilian pepper, Old World climbing fern, hydrilla, water lettuce, and water hyacinth |
|                                                                                                                                                                                |            |                  | Remaining plans                                                                                                        |
| Objective 2-B.2: Achieve maintenance control of Brazilian pepper, melaleuca, Australian pine, and Old World climbing fern on South Florida's public conservation lands by 2020 | Project ID | Project Endpoint | Project Name                                                                                                           |
|                                                                                                                                                                                | 2600       | 2020             | Achieve maintenance control status for Brazilian pepper, melaleuca, Australian pine, and Old World climbing fern       |
| Objective 2-B.3: Complete an invasive exotic plant prevention, early detection, and eradication plan by 2005                                                                   | Project ID | Project Endpoint | Project Name                                                                                                           |
|                                                                                                                                                                                | 2700       | 2005             | Invasive Exotic Plant Prevention, Early Detection, and Eradication Plan                                                |

### Goal 3: Foster Compatibility of the Built and Natural Systems

Balmy weather, vibrant communities, beautiful scenery, and abundant natural habitats at the land/sea interface offer South Florida residents a unique choice of lifestyles and visitors a variety of destinations. The diversity of landscapes, including some of the most intensively developed and densely populated areas in the state, has contributed to the economic success and high quality of life enjoyed by Floridians and experienced by visitors from around the world.

This lifestyle has not come without a price. Tremendous population growth and the subsequent need for public services have resulted in adverse impacts on natural ecological systems. These impacts include loss of marine, wetland, and upland habitat, severe drawdown of freshwater resources, intrusion of saltwater into freshwater aquifers, loss of open space, and degradation of water quality. The rapid rate and volume of growth and the accompanying sprawl development patterns have reduced the spatial extent and vitality of the natural system. Its declining health has become more apparent as symptoms of stress have developed in the South Florida Ecosystem. The imbalance has caused state, local, regional, and national decision makers and citizens to focus on addressing the unintended consequences of growth.

A consensus-building exercise in 1999 with broad public input identified a list of statements that Task Force participants used as a foundation to develop the Task Force strategy. Based on that consensus, the compatibility of the built and natural systems will be achieved when the following conditions are met: The people of South Florida understand the connections between a healthy environment and a healthy community. Development patterns—development, redevelopment, and infrastructure—are complementary to ecosystem restoration and compatible with a restored natural system. Development practices support conservation of significant and special natural areas and reduce habitat fragmentation. Flood-protection level of service and water resources are maintained at existing levels, or augmented where appropriate. The quality of life of people in South Florida is enhanced through the ability to reside in areas with fishable, drinkable, and



swimmable water and clean air. Park, open space, and recreation lands, blueways, greenways, and roadways are compatible with and complementary to getting the water right and enhancing and preserving the natural system. Land, water, wastewater, and transportation planning are coordinated and supportive of ecosystem restoration. Agriculture is an environmentally and economically sound component of the landscape, consistent with ecosystem restoration. In agricultural and urban areas stormwater and wastewater are reclaimed when possible. The ecosystem is not damaged by improper disposal of wastes.

The same issues that are critical to the natural system—getting the water right and restoring, preserving, and protecting diverse habitats and species—are equally critical to maintaining a high quality of life for South Florida's residents. Like the future of South Florida's natural systems, the future of its human communities is dependent on getting the water right. The appropriate quantity, quality, timing, and distribution of water is essential to meeting the future water supply needs generated by projected population growth and by continuing economic productivity, most notably in tourism and agriculture (the two largest sectors of the economy). The overriding issue is not who gets the water, the natural system or the built system, but how to fulfill all water needs by ensuring that what is built can be adequately supported within the parameters of a healthy natural system. Failure to achieve this compatibility would likely be detrimental for both future residents and the environment. Recognizing this relationship, the State of Florida's guiding statute, Chapter 373.016, in the Declaration of Policy, promotes the availability of sufficient water for all existing and future reasonable-beneficial uses and natural systems.

Similarly, in order to maintain a high quality of life for South Florida's residents, the built environment must be planned and managed in a manner that both supports the social and economic needs of communities and is compatible with the restoration, preservation, and protection of natural habitats and species. This will require development patterns, policies, and practices that serve both built and natural systems. Urban, suburban, and rural development utilizes lands that would otherwise be available to support natural system functioning. To the extent that development patterns in these areas are sensitive to the critical needs of both community residents and the natural system, South Florida's communities can be a sustainable part of a healthy ecosystem.

Providing the land for suitable development and human habitation will continue to require considerable flood protection, since without such protection most of South Florida would be unsuitable for existing urban and agricultural uses. Given the population growth projections for South Florida, there will be an ongoing need for monitoring and balancing the flood-protection needs of urban, natural, and agricultural lands as part of restoration.

Providing sufficient water resources, using and managing land, and maintaining and improving flood protection—all in a manner compatible with restoration of the South Florida Ecosystem—are important subgoals for fostering compatibility of the built and natural systems. The land use planning, flood control, environmental regulation, and similar activities needed to accomplish these subgoals are primarily the responsibility of the tribal, state, regional, and local governments in Florida. These government agencies must function within the authorities and appropriations for programs and activities established by the Florida Legislature and the local elected governing bodies. Constitutionally protected private property rights and the freedom of movement of the American people are also factors that affect the growth and development patterns in a given state and in localities.

The Task Force members recognize that these factors affect implementation of the restoration strategy and achievement of the strategic goals. Efforts to achieve goal 3 must incorporate a

process to address concerns of environmental justice and economic equity. The unique cultural and ethnic diversity of South Florida's population, with its strong representation of peoples from all over the world, will require significant efforts on behalf of the restoration partners to ensure that projects are implemented in ways that do not result in disproportionate impacts on any communities. Additional targeted efforts will be required to provide opportunities for socially and economically disadvantaged individuals and small businesses to participate in the implementation of restoration programs and projects. The Task Force and Working Group see this guiding principle as critical to long-term success.

### **Subgoal 3-A: Use and Manage Land in a Manner Compatible with Ecosystem Restoration**

#### **How This Subgoal Will Be Implemented**

*Compatible land use policies and practices.* State, regional, and local agencies are using a variety of planning tools to foster increased compatibility of the built and natural systems. Over the past several decades Florida has enacted several pieces of legislation regarding comprehensive planning and growth management, including the Local Government Comprehensive Planning Act and Land Development Regulations, which provide an integrated framework of planning at the state, regional, and local levels. However, growth continues to stress both public infrastructure and the natural environment. The Governor's Growth Management Study Commission has reported that although the processes established by the existing growth management laws were well intended, improvements to the process should still be made.

Recognizing the critical importance of water to both the built and natural systems, the Florida Legislature passed a law in 2002 that addresses growth management and alternative water supply. The law requires that the comprehensive land use plans of counties and cities be coordinated with the completed regional water supply plans of the state's water management districts to ensure the availability of adequate water supplies.

A new initiative by the Florida Department of Community Affairs (DCA) involves the review and analysis of existing and future land use designations adjacent to lands identified for acquisition for ecosystem restoration and associated buffers. DCA anticipates working with local governments as they develop the criteria for this review process.

*Protection of a wide range of compatible recreational uses.* People's enjoyment of nature is arguably the strongest impetus for the broad public support of ecosystem restoration. Many of the cultural traditions of the residents of South Florida have been shaped by people's access to expansive wetland, upland, and marine habitats harboring abundant populations of fish, birds, and other wildlife, and to exceptionally beautiful landscapes where they could lose themselves for days or a few moments. As citizens and their governments work to restore and protect the unique South Florida Ecosystem, they must not lose sight of the importance of public access to natural areas. At the same time the public must respect the sensitivities of the natural system and ensure that their activities do not unduly stress the wildlife and the landscapes that are such an important part of their heritage.

The Task Force members are working to protect opportunities for a wide range of compatible outdoor recreational activities for all residents of South Florida and their visitors. The acquisition of rural and urban park, recreation, and other open space lands, and efforts to link these natural areas through a system of greenways, blueways, and trails, are specifically addressed in this section of the Task Force strategy. So are the efforts to help ensure that agricultural lands, which provide valuable open space and wildlife habitat, remain undeveloped. Other efforts include the improvement of recreational areas with appropriate facilities, including boat ramps, off road

vehicles/ airboat ramps, hiking trails, and horse trails, and the management of canals to enhance fishery habitat. The work to improve the health and productivity of habitats, addressed directly by goal 2 and indirectly by goal 1, is expected to restore a sustainable natural system that South Floridians may continue to enjoy for generations to come. Local, state, and federal efforts to ensure a variety of opportunities for people's access to this natural system are a critically important complement to this work.

*Park, recreation, and other open space lands.* Park, recreation, and other open space lands protect natural systems and/or serve as buffers between natural and built environments. They often improve water quality and help attenuate flood waters after significant storm events. Public access to these areas fosters an appreciation for the natural system. When residents of urban areas have access to natural areas and a variety of resource-based recreational opportunities, it increases the potential that they will appreciate the importance of protecting a healthy natural system.

The Florida Communities Trust program provides grants to local governments in the state to help implement the natural resource, conservation, coastal, and recreation elements of the statutorily mandated Local Government Comprehensive Plan. These grant funds are primarily used for the acquisition of green and open space, and park and recreation lands at the local level. In addition, many localities use grant funds appropriated by the Florida Legislature to acquire and develop local park and recreation areas under the Florida Recreational Development and Assistance Program.

*Linked open space and buffers.* Greenways, blueways, and trails multiply the benefits of open spaces to natural systems by linking those spaces together, and they enrich the quality of life of community residents and visitors by facilitating access to the state's natural and cultural heritage sites and by enhancing people's sense of place. In some cases, the greenway system also offers opportunities to improve the water quality of stormwater runoff.

The Florida Greenways and Trails System is guiding a statewide initiative to create a system of greenways and trails connecting communities and conservation areas. When completed, the system will connect one end of the state to the other, from Key West to Pensacola. One goal of the program is to work with land managers to add an additional 10 percent per year to the total lands designated. The criteria for a designated land or waterway are that it must (1) protect and/or enhance natural, recreational, cultural, or historic resources and (2) either provide linear open space or a hub or site, or promote connectivity between or among conservation lands, communities, parks, other recreational facilities, cultural sites, or historic sites. The designation program encourages voluntary partnerships in conservation, development, and management of greenways and trails, provides recognition for individual components of the system and the partners involved, and raises public awareness of the conservation and recreation benefits of greenways and trails.

*Protecting and preserving sustainable agriculture.* Agriculture is Florida's second leading industry, producing \$18 billion in economic value each year. A large portion of agricultural land can be viewed as open space that benefits the natural system through buffering, augmentation of natural habitats, water storage and filtration, and aquifer recharge. It is of great concern that Florida is losing its farms and ranches because of declining profitability, land valuation, import/export and grade issues, and urban sprawl. Statewide almost 150,000 acres of productive agricultural lands are converted to other land uses each year. In the past some agricultural practices have impaired the functioning of natural systems, sometimes with adverse effects on native plants and animals, and sometimes to the detriment of the ability of the land to sustain agricultural uses over the long term. Several regulatory and voluntary programs are underway in the South Florida Ecosystem

and other areas in Florida to enhance environmental quality and the natural resource base upon which the agricultural economy depends.

The Everglades Best Management Practices Program, required by the 1994 Everglades Forever Act, specifically addresses the EAA and the C-139 Basin. The program goal of achieving a 25 percent reduction in the phosphorus load from the EAA has been met for each water year since the first full year of implementing best management practices (water years 1996 – 2003). EAA farmers have implemented a variety of practices to reduce the levels of phosphorus coming from their farms, including efficient fertilizer application, control of erosion and sediment loss, and effective stormwater management. Similar BMPs are implemented in the C-139 Basin, which is located adjacent to the EAA. The goal in this basin is to maintain phosphorus loads at or below historic levels. The first year of compliance determination was water year 2003, in which the C-139 Basin was determined to be out of compliance. This determination triggered inspections by the SFWMD staff to verify initial BMP implementation. The future direction in both basins is optimization of BMPs for further water quality improvements.

The federal Farm Bill of 2002 provides several voluntary conservation programs through the U.S. Department of Agriculture (USDA) to assist landowners in protecting and preserving their natural resources. The USDA provides incentive payments and cost-sharing to restore, enhance, and protect degraded wetlands on agricultural lands, including the purchase of easements through the Wetland Reserve Program. The Farm and Ranch Land Protection Program helps farmers and ranchers keep their land in agriculture through the purchase of conservation easements in partnership with local and state governments and nonprofit entities. The Environmental Quality Incentive Program promotes agricultural production and environmental quality as compatible goals. Financial and technical assistance is provided to landowners to implement best management practices to improve water quality or enhance natural resource values. The Wildlife Habitat Incentives Program encourages the creation of high-quality wildlife habitats that support wildlife populations important to the ecosystem. Financial assistance is provided to develop upland, wetland, riparian, and aquatic habitats on private lands. Implementation of these programs will contribute significantly to the strategic goals for South Florida Ecosystem restoration. The Grassland Reserve Program helps landowners and operators restore and protect grassland, including rangeland and pastureland, while maintaining the areas as grazing lands. The program emphasizes containing shrubs and forbs under the greatest threat of conversion

*Strategies for implementing the 2001 Rural and Family Lands Protection Act.* The conversion of rural lands to higher density and more intense uses is having a profound effect on Florida's ability to maintain a balance between population growth and the natural resources necessary to support that growth. The development of previously isolated rural landscapes is fragmenting and degrading the quality and character of Florida's natural and agricultural lands. The prevailing development patterns threaten the state's ability to meet the needs of its citizens through adequate delivery of services and the maintenance of an agricultural economy. Additionally, these growth patterns interrupt the natural hydrological and biological functions that support not only sustainable agriculture and healthy ecosystems, but also the quality of life enjoyed by South Floridians.

The Florida Legislature recognized the importance of maintaining a healthy agriculture industry when it passed the Rural and Family Lands Protection Act of 2001. This important act authorizes the responsible agencies to develop strategies to protect rural and agricultural and timber lands. Implementation strategies and appropriations for this effort are currently being developed, and appropriations continue to be sought for the program.

One such strategy is to secure conservation easements or protection agreements to compensate property owners for restrictions on the future use of their land. One of the biggest challenges in administering these programs is identifying economic resources to fund the program each year in a growing state struggling with many fiscal challenges. Recognizing these challenges in Florida and elsewhere, the NRCS Farm and Ranch Lands Protection Program (FRPP) provides matching funds to state, tribal and local governments and nongovernmental organizations with existing farm and ranch land protection programs to purchase conservation easements that help keep land in agriculture.

Concerned with the rapid rate at which agricultural lands are being converted into an urban environment in South Florida, federal and state agriculture agencies are implementing a number of incentive programs to decrease that rate. An effort is underway to assess how much land is in productive agriculture and what kinds of development pressures it is under. The Florida DEP and DACS and the University of Florida Institute of Food and Agricultural Sciences have been working together to implement incentive programs and to collect comprehensive data that will support efforts to retain viable and sustainable agriculture as part of the South Florida Ecosystem.

*Redevelopment of brownfields.* Federal EPA, state, regional, and local programs are contributing to the cleanup and redevelopment of contaminated and abandoned or underused sites in urban and rural areas of South Florida. Actual or perceived environmental contamination in urban infill sites—along with the risks and costs associated with cleanup—is a significant barrier to redevelopment. The remediation of this problem is contributing to the revitalization of South Florida's historic developed areas. This revitalization is expected to lessen development pressure and urban sprawl in areas to the west, needed in order to restore the South Florida Ecosystem and to ensure future regional water supplies.

The Eastward Ho! Brownfields Partnership, which includes Miami-Dade, Broward, and Palm Beach Counties, is a good example of how local, regional, state, and federal agencies are working with private nonprofit and community organizations to facilitate the redevelopment of brownfields. The partnership received a National Brownfields Showcase Community designation from the EPA in 1998. The EPA also has granted \$2 million to capitalize a brownfields cleanup revolving loan fund, which is being used to assist in the cleanup and reuse of brownfields in southeast Florida. The Partnership has also been active in the Florida Brownfields Program, administered and implemented by the Florida DEP. Miami-Dade County and the Cities of West Palm Beach, Opa-Locka, Miami, Miramar, Pompano Beach, Dania Beach, Miami Beach, Lauderdale, Hollywood, North Miami Beach, Hialeah, and Lauderdale Lakes have designated twenty-nine sites and areas, totaling 48,190 acres, under the Florida Brownfields Program. This accounts for 71 percent of the acreage designated in Florida as brownfields. The Florida DEP has delegated the administration and implementation of the Florida Brownfields Program in their respective jurisdictions to Miami-Dade and Broward Counties. This results in streamlining of the review and implementation of assessment and cleanup activities. Miami-Dade and Broward Counties are the only counties in the state of Florida to receive this delegation.

Of the approximately 2,100 estimated brownfield sites in the three-county southeast Florida area, some 390 sites have received various levels of environmental assessment review. Approximately 75 sites need no further assessment and will not require remediation. Five sites have undergone remediation activities and are either undergoing redevelopment or will shortly undergo redevelopment.

*Community Understanding of Restoration Projects.* The Corps of Engineers and the SFWMD coordinated an intensive public involvement process during the development of CERP, which

culminated in more than 1,500 people attending twelve public meetings in the fall of 1998. The agencies remain committed to involving the public in all aspects of CERP implementation. Their *Public Outreach Program Management Plan*, completed in 2001, defines the general scope, schedules, costs, products, and funding requirements necessary for the first five years of outreach activities. The major elements of the plan are summarized below:

General public awareness. Information about the CERP will be provided to the general population through media stories, participation by CERP outreach staff at community events; and distribution of informative print, electronic and other materials.

Minority Community Outreach. Special efforts will be made to inform and involve African-American, Haitian, and Hispanic residents of South Florida about CERP – groups that historically have been underrepresented in environmental programs.

Environmental Education. Appreciation of the Everglades and other natural resources by our children is extremely important because they will benefit from, and perhaps even participate in, CERP and other related restoration efforts as adults. Curricula and teachers' guides will be developed and distributed in K-12 schools throughout the 16-county south Florida region, often in partnership with the Newspapers in Education (NIE) program.

Small Business Outreach. Many CERP components will be handled by the private sector through contracts. Outreach activities will seek to empower and enable South Florida's small businesses to do business with the USACE and its partners. Staff will proactively engage and assist small businesses through business forums, workshops, and training sessions; development of web sites; distribution of printed materials; and other means.

Project-Level Involvement. Hundreds of stakeholder meetings, public workshops, and public meetings have already been held to involve local residents in the development of CERP projects. These have been widely publicized, planned in locations convenient to the public, and often featured an open house for staff to meet with residents. This form of one-on-one communication is essential to the success of CERP.

The Working Group also participates in a public-private partnership between the Task Force and the Museum of Discovery and Science. The success of this collaborative effort will result in environmental education programs, enhanced outdoor exhibitry, and an informative kiosk about the Greater Everglades ecosystem restoration effort, which will provide information to the half million people who visit the museum annually.

#### **Factors Affecting Achievement of this Subgoal**

*Unanticipated growth.* Accelerated growth in South Florida over predicted levels will significantly increase the loss of open space to other land uses, particularly development. Government agencies are preparing long-term plans and setting priorities based on assumptions about levels of growth and demand for services, which if eclipsed will seriously challenge the ability of local governments and agencies to respond in ways that adequately protect the natural system.

*Management complexity.* Fostering development patterns that are compatible with natural systems requires close coordination of multiple jurisdictions with authority over the built environment. Without such coordination, gains in compatibility on lands within one jurisdiction (in habitat connectivity, for example) might be negated by incompatible development in a neighboring jurisdiction. Because many development issues involve corridors such as roads, transit routes, or

greenways that cross multiple jurisdictions, unilateral actions by individual communities are often impossible.

Coordination is also required between jurisdictions with authority over the built environment and jurisdictions with authority over natural systems. The strategic goal is compatibility, and any efforts that undermine the sustainability of either the built or the natural system could further harm the ecosystem. Potential regulations on agriculture pose a good example. On the one hand, any federal, state, or local agricultural policy intended to protect natural systems but that does not sufficiently provide for economic stability of the industry may result in such unintended consequences as a long-term reduction in open space and wildlife habitat as agricultural land is converted to other land uses. On the other hand, agricultural practices that degrade the natural environment may also ultimately prove catastrophic to agriculture. If awareness of and respect for these interrelationships lags behind other considerations, the success of ecosystem restoration may be delayed.

*Funding.* Local and regional jurisdictions will need adequate revenues and possibly supplemental funding to develop plans for a better pattern of protection by acquiring land, or less-than-fee interests in land, to link park, recreation, open space, and other significant land and water areas, and to enforce environmental regulations for the protection of those areas. Changes in local, state, or federal economic conditions may change the priorities of projects needed to implement this subgoal.

*Environmental Justice.* Early and sustained participation in community affairs by all segments of the community is critical. This may not occur unless policies and activities designed to involve all segments of the community are institutionalized so that they may continue beyond the timeline of the Working Group. Environmental ombudsmen located in restoration partner agencies would aid in getting community issues to the appropriate person and responsible agency. In addition, trained volunteers who continually improve the knowledge base of restoration in the community will be important.

#### **Specific, Measurable Objectives for Achieving this Subgoal**

Five objectives for achieving this subgoal have been adopted by the Task Force:

Designate an additional 480,000 acres as part of the Florida Greenways and Trails System by 2008

Increase participation in the Voluntary Farm Bill conservation programs by 230,000 acres by 2014

Acquire an additional 2,500 acres of park, recreation, and open space lands by 2005

Complete five brownfield rehabilitation and redevelopment projects by 2006

Increase community understanding of ecosystem restoration

The key projects needed to achieve these objectives and the schedule for their implementation are shown in Strategic Plan Table 6.

**Strategic Plan Table 6. Subgoal 3-A: Use and Manage Land in a Manner Compatible with Ecosystem Restoration**

| Milestone Projects                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| (Refer to Appendix B - <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.) |

|                                                                                                                   |            |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------|------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Objective 3-A.1: Designate an additional 480,000 acres as part of the Florida Greenways and Trails System by 2008 | Project ID | Project Endpoint | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                   | 3100       | 2008             | Florida Greenways and Trails Designation Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                   | 3102       | 2004             | Lake Okeechobee Scenic Trail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                   | 3103       | TBD              | Florida Keys Overseas Heritage Trail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Objective 3-A.2: Increase participating in the voluntary Farm Bill Conservation Programs by 230,000 acres by 2014 | Project ID | Project Endpoint | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                   | 3201       | 2011             | Technical Assistance to Indian Reservations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                   | 3203       | 2014             | 2002 Farm Bill                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Objective 3-A.3: Acquire an additional 2,500 acres of park, recreation, and open space lands by 2005              | Project ID | Project Endpoint | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                   | 3300       | 2005             | Florida Communities Trust Grant Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Objective 3-A.4: Complete five brownfield rehabilitation and redevelopment projects by 2006                       | Project ID | Project Endpoint | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                   |            | 2006             | Konover Site - Fort Lauderdale<br>Little Haiti Park Site - Miami<br>Liberia Area - Hollywood<br>Gravity Entertainment Site - Lauderdale Lakes<br>Former Palm Beach Lakes Golf Course - West Palm Beach<br>Liberty City Area - Miami<br>The Wynwood Project - Miami<br>Wagner Square Project - Miami<br>Pompano Beach Multi-Purpose Project<br>Potamkin Properties - Miami Beach<br>Biscayne Commons Site - North Miami Beach<br>Beacon Lakes - Miami Dade County<br>Mid-Town Miami<br>Stiegel Gas & Oil Corp - Miami<br>Former Gipson's Service Station - Miami<br>Former JG Shamrock/Supreme Service Station- Miami<br>McArthur Dairy Site - Lauderhill<br>Dania Motocross Brownfield Area - Dania Beach |
| Objective 3-A.5: Increase community understanding of ecosystem restoration by 2006                                | Project ID | Project End Date | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                   | 3500       | TBD              | USDA NRCS Earth Team Project, in cooperation and coordination with the South Florida Ecosystem Restoration Inc. and South Florida Ecosystem Restoration Advisory Committee, will train 1000 volunteers to educate citizens about and how to participate in ecosystem restoration and conserving natural resources.                                                                                                                                                                                                                                                                                                                                                                                        |

**Comment [Gs3]:** Is this a Farm Bill project? If not, change objective to "ag lands conservation management programs" (a la the matrix)?

**Deleted: ¶**

### Subgoal 3-B: Maintain or Improve Flood Protection in a Manner Compatible with Ecosystem Restoration

WRDA 2000 clearly states that implementation of the CERP shall not reduce levels of service for flood protection that were in existence on the date that the law was enacted and in accordance with applicable law. The Savings Clause states that CERP environmental protection projects, including increased canal and groundwater levels, need to be accomplished in a way that does not harm flood protection.

**Comment [LF4]:** Moved earlier in section from conference call discussion

The SFWMD operates and maintains the primary flood control and water supply system within its sixteen-county jurisdiction. The major portion of that system is comprised of the federally designed and constructed C&SF Project. The SFWMD operates and maintains the multipurpose



CS&F Project and other projects within the Big Cypress Basin pursuant to regulation schedules and operational guidelines established by the USACE. This primary regional system is complemented by secondary and tertiary systems that are operated and managed by local governments, drainage districts established by Chapter 298 of the Florida Statutes, and private interests to ensure that the drainage and surface waters are routed to the primary drainage system.

The C&SF Project was originally authorized by the Flood Control Act of 1948, and most of the originally authorized project facilities were constructed during the period from 1950 to 1972. Some modifications to the primary system have occurred since the original authorization. Larger than predicted population growth and different development patterns from those projected in 1948 have, over time, challenged the ability of the primary, secondary, and tertiary drainage systems to meet the original goals of maintaining flood protection for urban and agricultural lands.

Maintaining efficiencies in a combination of primary and secondary drainage systems is needed to achieve and maintain original design flood protection planning goals for South Florida. Further modifications, updates, and upgrades are needed in many of the existing water control facilities in order to support the current restoration endpoint levels of flood protection. The CERP, as authorized by Congress in WRDA 2000, is the consensus plan that is to be used to modify and improve the C&SF Project to benefit the Everglades Ecosystem and to help provide for the water needs of the South Florida region, including water supply and flood protection.

Severe flooding occurred within areas of Miami-Dade County as a result of Hurricane Irene in October 1999 and intense rainfall in October 2000. In response to the October 2000 flood, the executive director of the SFWMD appointed a Recovery Task Force under the auspices of the Emergency Operations Center to develop a list of proposed flood mitigation projects for the impacted areas of Miami-Dade County. This Task Force has recommended that mitigation projects be considered on a basinwide basis and include improvements to both the primary and secondary stormwater conveyance systems. A Miami-Dade County Flooding Task Force, which also was created in response to these events, made recommendations that included the expeditious completion of the Modified Water Deliveries and C-111 Projects to help alleviate the flooding risk. Although none of the recommendations are designed to "flood-proof" the basins in which they are constructed, the projects should provide for increased primary system conveyance, which will then allow flood mitigation benefits from secondary system improvements provided by local communities.

Maintaining flood protection can also impact water supply. The C&SF Project provides flood protection by discharging water into the ocean through canals. That water therefore is made unavailable for water supply. As flood protection is provided for the agricultural and urban areas bordering the Everglades, there is the potential for increasing the loss of freshwater supplies. Some components of the CERP are designed to decrease this loss.

#### **How This Subgoal Will Be Implemented**

*Public works construction.* Capital improvements, modifications, and repairs to water control and conveyance facilities will help maintain and improve flood protection. The CERP consists of numerous projects that may provide incidental improvements to flood protection while decreasing the loss of freshwater supplies. Other large-scale projects, such as the C-111 I Project, consist of structural and nonstructural modifications to existing works intended in part to maintain flood protection. Opportunities to provide greater levels of flood protection or to

provide flood protection in areas where there is currently no flood protection may be considered during implementation of the CERP, provided that the greater level of protection or the provision of new flood protection is consistent with the goals and purposes of the CERP and is economically justified.

Additional flood protection is provided by projects funded by the Federal Emergency Management Agency (FEMA), including the C-4 Basin Flood Mitigation Project. This project, which is administered by the SFWMD, will improve canals in the C-4 basin and provide an emergency water impoundment to hold excess canal water when canals reach critical capacity.

*Nonstructural flood protection.* Numerous nonstructural options for flood protection exist for the built environment. These include, but are not limited to, ensuring that new construction meets FEMA guidelines, land use planning to guide development away from flood-prone areas, and acquiring undeveloped lands from willing sellers.

#### **Long-Term Operations and Maintenance Needs**

The SFWMD implements an ongoing Canal Conveyance Capacity Program to evaluate the maintenance, dredging, and bank stabilization requirements of the C&SF Project. This program is intended to restore the original design capacity of the canals as constructed. SFWMD's Capital Maintenance Program evaluates and implements refurbishment and/or replacement of existing water control structures and pumping stations that have reached the end of their design life. Exotic and aquatic plant control, through herbicidal, mechanical, and biological control methods, is another means of ensuring that conveyance capacity within canals and water bodies is maintained to their original capacity.

#### **Factors Affecting Achievement of this Subgoal**

*Unanticipated growth.* Population growth and changes in land use, especially if different from what is projected, will continue to affect the capability of state and federal agencies to provide flood protection for natural, urban, and agricultural lands. Land conversions to different uses are particularly stressful to the flood-protection system, since the flood protection requirements may vary greatly among different uses.

The increase in developed areas to accommodate population growth within the drainage basin of the C&SF Project will increase surface runoff, lowering the level of service for flood protection and increasing the intensity and duration of floods.

*Funding.* Continued financial support from Congress and the Florida Legislature will be necessary to complete projects for timely achievement of flood-protection goals.

#### **Specific, Measurable Objectives for Achieving this Subgoal**

One objective for achieving this subgoal has been adopted by the Task Force:

Maintain or improve existing levels of flood protection

The key projects needed to achieve this objective and the schedule for their implementation are shown in Strategic Plan Table 7.

**Strategic Plan Table 7. Subgoal 3-B: Maintain or Improve Flood Protection in a Manner Compatible with Ecosystem Restoration**

| Milestone Projects<br>(Refer to Appendix B - <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.) |            |                  |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------|------------------------------------|
| Objective 3-B.1:<br>Maintain or improve existing levels of flood protection                                                                                               | Project ID | Project Endpoint | Project                            |
|                                                                                                                                                                           | 3600       | 2004             | C-4 Basin Flood Mitigation Project |
|                                                                                                                                                                           | 1300       | 2005             | C- 111 Canal project               |

### Subgoal 3-C: Provide Sufficient Water Resources for Built and Natural Systems

The State of Florida has statutory goals and responsibilities to ensure an adequate supply of water for protection of the natural system and for existing and future “reasonable-beneficial” potable, industrial, and agricultural uses. For protection of the natural system, Florida law directs the SFWMD to set minimum flows and levels (MFLs) to prevent significant harm to water resources. MFLs have been established for Everglades National Park, the WCAs, Lake Okeechobee, and the Northern Biscayne Aquifer (except that portion of the aquifer located in southern Miami-Dade County). MFLs also have been established for the Caloosahatchee River, St. Lucie River and Estuary, and the Northwest Fork of the Loxahatchee River. WRDA 2000 (attached as Appendix D) requires water reservations for the protection of fish and wildlife in natural systems pursuant to state and federal laws associated with implementation of the CERP.

WRDA 2000, through the Savings Clause, prohibits the elimination or transfer of existing legal sources of water until a new source of water supply of comparable quantity and quality as that available on December 11, 2000 is available to replace the water that will be lost as a result of CERP implementation.

#### How This Subgoal Will Be Implemented

As water storage and other water supply related projects and programs are implemented (see subgoal 1-A), reliable sources of water identified for human supplies will become available to meet projected demands on a regular basis. The potential for water shortages will be reduced as projects are completed.

Restoration partners support the state’s strong commitment to achieving its water supply goals through a variety of additional state and local efforts. Some of these efforts are reflected under other strategic goals and subgoals (for example, planning for growth is addressed under subgoal 3-A). Efforts unique to this subgoal are described below.

*Implement a process of reserving water through time that will meet the needs of the natural system.*  
WRDA 2000 requires the State of Florida to reserve the water generated by the CERP and needed for Everglades restoration. The SFWMD, consistent with its water management responsibilities, is working to fulfill that commitment.

The SFWMD will also identify existing water supplies for the protection of fish and wildlife for key natural systems (e.g. Everglades and WCAs). This will provide information needed to make future decisions about consumptive use permits.

The SFWMD Governing Board has developed guiding principles for reviewing permit applications dependent upon C&SF project deliveries and recharge to ensure consistency with the CERP. These will complement the "B" list consumptive use permitting rules that limit permit durations for increased withdrawals that affect the regional system water supplies. This document was accepted by the SFWMD Governing Board in June 2003. A guidance memorandum, required by the Federal Programmatic Regulations, is being developed which further details the process and methodology for identifying water to be managed and reserved for the natural system. This guidance memorandum is scheduled for completion in December 2004.

*Implement the Recommendations of the 2002 Water Conservation Initiative Report.* The SFWMD is developing a rule that will implement certain report recommendations and assist water managers in improving the ability to meet water demands in times of flood and drought over and above existing mandatory conservation requirements in District Rules. The Water Conservation Rule will establish goal-based water conservation standards that will reflect a water conservation ethic focused on performance. The rule will enhance the SFWMD's ability to achieve conservation benefits through public outreach, cooperative grant funding, and technical assistance.

*Implement and update regional water supply plans.* Regional water supply plans with twenty-year planning horizons, which reassess base assumptions and current technologies every five years, have been completed for each of the four SFWMD regional water supply planning areas: Lower East Coast, Upper East Coast, Kissimmee Basin, and Lower West Coast. The goal of each plan is to meet the water supply needs of the region during a one-in-ten-year drought while not causing harm to the environment. The water supply plans include strategies for (1) increasing supply for natural systems and the human population through water resource development projects, (2) promoting the use of alternative water supply sources and conservation, (3) protecting water quality at the source of supply, (4) accurately reflecting limitations of the available ground water or other available water supplies in plans for future growth and development, (5) increasing the available water supply, and (6) protecting natural systems from harm through the consumptive use permitting process, from significant harm through establishment of minimum flows and levels, and from serious harm through proper implementation of water shortage plans. The Lower East Coast Water Supply Plan will incorporate and account for the CERP projects and their benefits for the natural system and human water supply.

*Improve water conservation and reuse.* The SFWMD regional water supply plans outline the planning and permitting efforts needed to encourage water conservation and lower consumptive use rates over time. Strategies to improve conservation and reuse incorporate different approaches for public, commercial, landscape, and agricultural consumers. These strategies include limits on the time of day irrigation is allowed, inverted rate structures, xeriscape landscaping using native plants, establishment of mobile irrigation labs, grants to implement conservation projects, and feasibility analyses for using reclaimed water. A strong public education program supports these strategies.

*Increase water resources through alternative water supply development and water resource development projects.* The SFWMD has implemented programs with goals to increase the amount of available water. These programs have been in place for some time and are often in addition to the projects in the CERP. The Alternative Water Supply Development Program awards grants to local water providers to develop additional water supply through alternative technologies. Through its Water Resource Development Projects, the SFWMD attempts to increase the regional water resources available for natural and built environment needs.

*Establish minimum flows and levels for priority water bodies.* The SFWMD is working to establish minimum flows and levels for priority water bodies according to the annual Florida DEP approved schedule. This will improve the efficiencies of delivering water and maximizing available resources.

#### Factors Affecting Achievement of this Subgoal

*Unanticipated growth.* If population growth and/or water used for irrigation exceed projections, variations in growth projections are incorporated into five-year updates to the regional water supply plans.

*Funding.* Adequate funding will be required to accomplish water storage and other water supply related projects. Likewise, adequate funding of public outreach and education will be critical to achieving water conservation strategies and reduced consumption rates. Efforts to encourage partnerships that promote and enhance local government programs to develop and implement alternative water supply resources will be important to achieving water supply goals.

#### Specific, Measurable Objectives for Achieving this Subgoal

Three objectives for achieving this subgoal have been adopted by the Task Force:

Achieve the regional water supply restoration endpoint of 478.5 million gallons per day by 2008

Increase volumes of reuse on a regional basis

Increase water made available through the SFWMD Alternative Water Supply Development Program

The key projects needed to achieve these objectives and the schedule for their implementation are shown in Strategic Plan Table 8. The outputs listed in Table 9 and the measures and restoration endpoints in the Project Summary Table in Appendix B reflect the strategic goals and are not intended to function as an allocation or reservation of water, which must be implemented through applicable law.

**Strategic Plan Table 8. Subgoal 3-C: Provide Sufficient Water Resources for Built and Natural Systems**

| Milestone Projects<br>(Refer to <b>Error! Reference source not found.</b> for more information about project schedules, funding, responsible agencies, etc.) |            |                      |                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------|-------------------------------------------------------------------|
| 3-C.1: <del>Increase</del> water available to target of 478.5 million gallons per day by 2008                                                                | Project ID | Restoration Endpoint | Project                                                           |
|                                                                                                                                                              | 3701       | 2008                 | Lower East Coast Water Supply Plan                                |
|                                                                                                                                                              | 3702       | 2008                 | Lower West Coast Water Supply Plan                                |
|                                                                                                                                                              | 3703       | 2008                 | Upper East Coast Water Supply Plan                                |
|                                                                                                                                                              | 3700       | 2008                 | Kissimmee Basin Water Supply Plan                                 |
| 3-C.2: Increase volume of reuse on a regional basis                                                                                                          | Project ID | Restoration Endpoint | Project                                                           |
|                                                                                                                                                              | 3800       | 2023                 | C&SF: CERP –South Miami-Dade County Reuse                         |
|                                                                                                                                                              | 3801       | 2023                 | C&SF: CERP – West Miami-Dade County Reuse                         |
|                                                                                                                                                              | 3805       | 2004                 | Orlando Kissimmee Area Regional Reclaimed Water Optimization Plan |

Deleted: Achieve regional

Deleted: supply

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|                                                                                     |            |                      |                                                                                   |
|-------------------------------------------------------------------------------------|------------|----------------------|-----------------------------------------------------------------------------------|
|                                                                                     | 3803       | 2008                 | Lower West Coast Regional Irrigation Distribution System Master Plan Study        |
|                                                                                     | 3804       | 2004                 | Northern Palm Beach County and Southern Martin County Reclaimed Water Master Plan |
| 3-C.3: Increase water made available through SFWMD alternative water supply program | Project ID | Restoration Endpoint | Project                                                                           |
|                                                                                     | 3900       | Ongoing              | Alternative Water Supply Grant Program - annually                                 |

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### Linkages between Strategic Work Efforts and Ecosystem Restoration

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The Task Force members measure progress on two complementary scales: (1) scales that measure the satisfactory completion of work and (2) scales that measure ecosystem health (in terms of either stressors, ecological conditions, or other water-related needs). With these two scales the Task Force distinguishes between those things that are within people's capability to manipulate and control (the strategic goals, subgoals, and objectives) and those things that are the responses of natural systems (indicators and restoration endpoints) to the Task Force agencies' efforts.

No exclusive linkage exists between any one strategic goal or objective (let alone, any one specific project) and any one indicator of ecological conditions. Efforts on many fronts will be necessary to restore and sustain a healthy ecosystem, which will then be manifested through a myriad of species and processes. However, positive correlations are expected between individual indicators of ecological conditions and groups of projects designed to eliminate or mitigate stressors that are detrimental to those indicators. Some of these relationships were charted in table C-1 in Appendix C. This table will be updated when the Task Force adopts revised indicators and restoration endpoints following the current work of the SCG.

The Task Force believes that the ecosystem will respond with improved health and vigor to efforts to reverse disruptive human influences. Due to the complexity and large scope of this effort, the agencies involved in restoration continue to improve their understanding of how restoration will occur. This understanding is critical to the ability to accurately assess the major stressors on the various components of the ecosystem and consider how the physical improvements expected to result from projects designed to eliminate or mitigate stressors will affect ecological conditions and other water-related needs. Relationships between projects and the elimination or mitigation of stressors will be more direct than relationships between projects and resulting ecological conditions; however, even these relationships cannot yet be accurately predicted with current ecological models.

The monitoring and assessment complexities cited above pose challenges, but the monitoring conducted to date has provided good information that has been useful in assessing the success of early restoration efforts. For example, in response to the reestablishment of more natural flow characteristics in the Kissimmee River, accomplished through the implementation of the Kissimmee River Restoration Project, wetland vegetation,

particularly broadleaf marsh species and buttonbush, is rapidly expanding within the reflooded floodplain. Recent observations indicate that the reconstructed section of river channel has received increased use by wading bird species, particularly snowy egrets, white ibis, tricolored herons, wood storks, and black crowned night herons. Other notable bird observations in this region include a roseate spoonbill and a whooping crane. This is one localized and general example of how the ecosystem is responding to work efforts that eliminate or mitigate disruptive human influences.



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BIENNIAL REPORT PURPOSE  
MAJOR ACCOMPLISHMENTS, AUGUST 2002 - JULY 2004  
PROGRESS MADE TOWARD RESTORATION, AUGUST 2002 - JULY 2004

## TRACKING SUCCESS:

BIENNIAL REPORT OF THE SOUTH FLORIDA ECOSYSTEM TASK FORCE

August 2002 - July 2004

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## BIENNIAL REPORT PURPOSE

This biennial report summarizes the activities of the South Florida Ecosystem Restoration Task Force for the reporting years August 2002 – July 2004.<sup>1</sup> WRDA 1996 directs the Task Force to report biennially on the following activities:

Policies, strategies, plans, programs, projects, activities, and priorities planned, developed, or implemented for South Florida Ecosystem restoration

Progress made toward restoration

[This biennial report documents progress made and describes how funds are targeted for restoration. It](#) satisfies the WRDA requirements by providing the following information: First, it summarizes the major accomplishments of the reporting period in terms of the policies, strategies, plans, programs, projects, activities, and priorities that were developed or conducted to carry out the specific strategic goals and objectives adopted by the Task Force members. Second, it tracks the progress made toward restoration during the reporting period, in terms of selected measurable indicators of ecosystem health.

[The indicators of success tracked in previous biennial reports are being](#) revised. Those [approved in 2002 are provided as Appendix C until new indicators have been formally adopted.](#)

This biennial report is intended for four principal audiences:

United States Congress

Florida Legislature

Seminole Tribe of Florida

Miccosukee Tribe of Indians of Florida

The information included here will also be broadly shared with state and federal agencies, local governments, regional agencies and industries, private interest groups, and private citizens interested in South Florida Ecosystem restoration.

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<sup>1</sup> The Task Force member agencies operate within various fiscal year periods. All the federal agencies and the South Florida Water Management District operate within a fiscal year that begins on October 1 and ends on September 30 of each year. The State of Florida agencies operate within a fiscal year that starts on July 1 and ends on June 30 of each year. Any annual dollar amounts included in this report apply to each agency's fiscal year. Pertinent footnotes are provided for these data.

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**POLICIES, STRATEGIES, PLANS, PROGRAMS, PROJECTS, ACTIVITIES, PRIORITIES:**

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**MAJOR ACCOMPLISHMENTS – AUGUST 2002 THROUGH JULY 2004**

A comprehensive discussion of the principles and strategies adopted by the Task Force, along with the major plans, programs, and projects of the various Task Force member agencies, is provided in *Coordinating Success: Strategy for Restoration of the South Florida Ecosystem*. This biennial report, *Tracking Success*, addresses only the Task Force member agencies' activities during the past two years, and it covers only the highlights of those activities. More complete and detailed discussions of the recently completed and ongoing projects can be found in reports produced by the participating agencies, particularly the USACE, the SFWMD, the Florida DEP, and the DOI.

The Task Force's strategy for restoration identifies strategic goals, subgoals, and measurable objectives that have been adopted by the Task Force member agencies, along with schedules for their accomplishment. This section of the biennial report is organized to describe the progress made toward each strategic goal and objective during the two-year reporting period, providing a basis for continuously evaluating and adaptively managing the restoration effort. This goal-by-goal discussion is preceded by a discussion of the accomplishments related to overall coordination and adaptive management of the restoration effort.

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***Coordination and Adaptive Management of the Restoration Effort***

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**Task Force Organization**

The Task Force implemented several organizational changes to improve the coordination and adaptive management of the restoration effort. Four of them are summarized below.

**Science Coordination Group (SCG)**

The SCG is the successor to the Science Coordination Team (SCT) that was established in 1997. In 2003, based on six years of activities by the SCT and on evaluations of the SCT role and activities by the Task Force, the SCT itself, and the General Accounting Office (GAO),<sup>2</sup> the following changes were made to clarify and further improve the coordination of science: First, the Task Force created a new science coordinating body to replace the former SCT. This new group was elevated to the level of the Working Group and renamed the Science Coordination Group to better reflect its new role and status. Second, the Task Force, in consultation with the SCT, wrote a new charter establishing the SCG and clarifying the roles and duties of the organization. Third, the Task Force directed the SCG to develop a draft science coordination plan that tracks and coordinates programmatic-level science and other research, identifies programmatic-level priority science needs and gaps, and facilitates management decisions. The SCG has been provided with additional resources to assist in the development of products needed by the Task Force.

**Working Group**

The charter for the Task Force Working Group was revised and approved December 3, 2003. The new charter clarifies the working relationship of the Task Force and Working Group and provides more succinct guidance on work priorities and a streamlined membership.

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<sup>2</sup> GAO-03-345, March 2003.

### **Combined Structural and Operational Plan (CSOP) Advisory Team**

The USACE asked the Task Force to develop a team to assist in providing recommendations to the USACE during key phases in the CSOP process, and by doing so, to increase stakeholder participation. The CSOP Advisory Team was chartered by the Task Force on October 15, 2003, and held its first meeting December 17-18, 2003. The CSOP Advisory Team is comprised of stakeholders who will provide recommendations about the operations of the Modified Water Deliveries and C-111 Projects to the Task Force, which will in turn provide recommendations to the USACE. The implementation of the C-111 Canal Project is unusual due to the early implementation of components (S-332B, S-332C, and S-332D), the jeopardy opinion on the Cape Sable seaside sparrow by the FWS, and the additional water quality authorization and responsibilities directed by WRDA 1996.

### **Florida Invasive Animal Task Team (FIATT)**

The Working Group formed an invasive animal task team (previously called NEATT) for the purpose of developing a comprehensive assessment and strategy for the control and management of nonindigenous animals.

### **CERP Programmatic Regulations**

The USACE, with the concurrence of the Governor of Florida and the DOI, and in consultation with the Seminole Tribe of Florida, the Miccosukee Tribe of Indians of Florida, the U.S. Environmental Protection Agency (EPA), the U. S. Department of Commerce, and other federal, state, and local agencies, published the final rule for the "Programmatic Regulations for the Comprehensive Everglades Restoration Plan" in the *Federal Register* on November 12, 2003. The Programmatic Regulations are required by WRDA 2000 to define

- CERP implementation processes, including the development of project implementation reports, project coordination agreements, and operating manuals that ensure that the CERP goals and objective are achieved
- processes to ensure that new information, resulting from new or unforeseen circumstances, new scientific or technical information, or from adaptive management, is integrated into CERP implementation
- processes to ensure the protection of the natural system consistent with CERP goals and purposes, including the establishment of interim goals needed to evaluate success throughout the implementation process

The Programmatic Regulations direct the USACE and the SFWMD, in consultation with the DOI, the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, the EPA, the Department of Commerce, the Florida DEP, other federal, state, and local agencies, and the Task Force, to develop

- a pre-CERP baseline
- six programwide guidance memoranda
- a master implementation sequencing plan
- periodic CERP updates

The Programmatic Regulations also require the establishment of interim goals and endpoints. The progress made toward these requirements during the reporting period is summarized below.

### **Pre-CERP Baseline**

The pre-CERP baseline is currently under development (see the CERP Monitoring and Assessment Plan, below). This baseline is defined in the Programmatic Regulations as the hydrologic conditions in the South Florida Ecosystem on the date of enactment of WRDA 2000, as modeled by using a multiyear period of record based on assumptions such as land use, population, water demand, water quality, and assumed operations of the C&SF Project. The pre-CERP baseline will be used, along with other analyses, to determine if an existing legal source of water has been eliminated or transferred or if a new source of water is of comparable quality to that which has been transferred. Also, each project implementation report (PIR) shall include appropriate analyses and consider the operational conditions included in the pre-CERP baseline to demonstrate that the project will not reduce levels of service for flood protection that (1) were in existence on the date of enactment of WRDA 2000 and (2) are in accordance with applicable law.

### **Guidance Memoranda**

The process to develop the Guidance Memoranda, which are required by the Programmatic Regulations to be developed by December 2004, was well underway at the end of the reporting period. The six guidance memoranda are as follows:

- general format and content of project implementation reports
- instructions for formulation and evaluation of alternatives developed for project implementation reports, their cost effectiveness and impacts
- general content of operating manuals
- general directions for the conduct of the assessment activities of RECOVER
- instructions relevant to project implementation reports for identifying the appropriate quantity, timing, and distribution of water to be dedicated and managed for the natural system
- instructions relevant to project implementation reports for identifying if an elimination or transfer of existing legal sources of water will occur as a result of implementation of the plan

### **Master Implementation Sequencing Plan**

The development of the Master Implementation Sequencing Plan (MISP), which is required by the Programmatic Regulations to be developed by December 13, 2004, in consultation with the USACE and SFWMD restoration partners, was also well underway at the end of the reporting period. The preliminary draft time bands of the MISP for CERP projects have been incorporated into the Task Force strategy and the integrated financial plan. The MISP includes the sequencing and scheduling of all the CERP projects, including pilot projects and operational elements, based on the best scientific, technical, funding, contracting, and other information available. The purpose of the MISP is to define the order in which the many projects within the South Florida Ecosystem Restoration Program will be planned, designed, and constructed. The MISP shall be reviewed at least every five years.

### **Initial CERP Update**

An initial CERP update is presently under development. Such an evaluation of the CERP using new or updated modeling that includes the latest scientific, technical, and planning information will occur whenever necessary to ensure that the goals and purposes of the CERP are achieved, but not any less often than every five years. As part of these evaluations the USACE and the SFWMD shall determine the total quantity of water that is expected to be generated by the plan, including the quantity expected to be generated for the natural system to attain the Task Force strategic goals, as well as the quantity expected to be generated for use in the human environment.

### CERP Interim Goals and Targets

The Programmatic Regulations require the establishment of interim goals to provide a means for evaluating restoration success of the CERP at specific time intervals during implementation, and the establishment of interim targets to evaluate progress in providing for other water-related needs of the region. The interim goals and targets shall be consistent with each other. More specifically, the Programmatic Regulations require the following:

By June 14, 2004, RECOVER is to provide recommendations about interim goals to the USACE, the DOI, and the SFWMD and recommendations about interim targets to the USACE and the SFWMD. However, the date for providing recommendations has been delayed, and the dates below are also anticipated to change accordingly.

By December 13, 2004, the Secretary of the Army and the Secretary of the Interior, in consultation with EPA, the Department of Commerce, the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, other federal, state, and local agencies, the Task Force, and the Governor of the State of Florida, are to execute an Interim Goals Agreement establishing interim goals to facilitate interagency planning, monitoring, and assessment so as to achieve the overarching objectives of the CERP and to provide a means by which the restoration success of the CERP may be evaluated and ultimately reported to Congress throughout the implementation process.

By December 13, 2004, the Secretary of the Army and the Governor of the State of Florida, in consultation with EPA, the Department of Commerce, the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, other federal, state, and local agencies, and the Task Force, are to develop proposed interim targets for evaluating progress towards other water-related needs of the region, provided for in the CERP, throughout the implementation process.

In October 2002 a RECOVER subteam developed a process for identifying and establishing numeric measures for indicators of ecosystem restoration (referred to as interim goals) and measures for indicators of other water-related needs (referred to as interim targets). In February 2003 the subteam published *Proposed Indicators for Interim Goals and Interim Targets for the CERP*. Because of the importance placed on the interim goals in WRDA 2000 and the CERP Programmatic Regulations, the RECOVER subteam determined that the proposed indicators and the methods for setting specific goals and targets should be vetted through a public and agency review process and submitted to an independent peer review panel.

RECOVER updated their proposed indicators and issued a review draft of *Recommendations for Interim Goals and Interim Targets for the Comprehensive Everglades Restoration Plan: Indicators and Prediction Methods* on January 30, 2004. This document, which describes twenty-two hydrologic, water quality, and biological indicators and five indicators for other water-related needs (including water supply and flood protection), will be submitted for peer review. Once approved, the RECOVER indicators will be used for systemwide assessment of CERP projects to support planning and adaptive management, and the set of indicators reported by the Task Force will be revised accordingly (recognizing that the Task Force may also report on other indicators not covered by the CERP).

#### CERP Adaptive Management Program

This program developed by the USACE and SFWMD, in consultation with the Seminole Tribe of Florida, the Miccosukee Tribe of Indians of Florida, the EPA, the U. S. Department of Commerce, and other federal, state, and local agencies will assess responses of the South Florida Ecosystem to implementation of the CERP. Periodic CERP updates will ensure that the goals and purposes of the plan are being achieved.

Comment [LF5]: Moved down from above for flow

### CERP Monitoring and Assessment Plan

Part one of the *Monitoring and Assessment Plan* (MAP) was completed in February 2004. The MAP is the primary tool by which the RECOVER program will assess the performance of the CERP. Part one describes the monitoring components and supporting research of the MAP and summarizes the assessment process. Part two, which is under development by the Adaptive Assessment and Water Quality Teams of RECOVER, will fully describe an assessment process for interpreting the information to be collected under the plan.

The overarching goal for implementation of the MAP is to have a single, integrated, systemwide monitoring and assessment plan that will be used and supported by all participating agencies and tribal governments as the means of tracking and measuring the performance of the CERP. The four broad objectives for the MAP are to

- Establish a pre-CERP reference state ("baseline"), including variability for each of the performance measures
- Assess systemwide responses of the ecosystem to CERP implementation
- Detect unexpected responses of the ecosystem to changes in stressors resulting from CERP activities
- Support scientific investigations designed to increase ecosystem understanding, establish cause-and-effect relationships, and interpret unanticipated results

### State and Federal CERP Funding Commitments

Federal and state budgets reflected a continued priority to restore America's Everglades.

FY 2003-04 federal funding to the DOI and USACE for Everglades restoration totaled \$420 million. Additional FY 2003-04 funding to the EPA and the Departments of Commerce and Agriculture in support of Everglades restoration totaled \$76 million. This funding will continue successful partnerships and will steer ongoing projects towards completion. State funding for the same time period amounted to \$1.6 billion. State agencies included the SFWMD and the Florida DACS, DCA, DEP, Fish and Wildlife Conservation Commission, and Department of Transportation. Further information can be found in the Cross Cut Budgets for fiscal years 2003 and 2004.

### Water Resources Advisory Commission (WRAC)

The 48-member WRAC was appointed by the SFWMD Governing Board in 2001 and was designated as a stakeholder advisory group by the Task Force in January 2002. The WRAC has been meeting every month since its creation in 2001 and has conducted public participation and consensus-building workshops on critical water resource issues. Several significant issues were addressed by the WRAC in 2003. These included in-depth stakeholder review and recommendations on "B" List Rules of the SFWMD governing the issuance of consumptive water use permits, development of guidelines for issuing consumptive use permits consistent with CERP projects, the pre-CERP baseline, the SFWMD white paper on Water Resource Protection Strategies for the Implementation of CERP under State and Federal Law, recommendations to improve the SFWMD Long Term Plan to Improve Water Quality, development and recommendation to the Governing Board of a recreational access and use policy for SFWMD lands, recommendations about the need to restore flow patterns in WCA-3 while maintaining an important recreational fishery in the L-67 canal; and, recommendations to the Governing Board regarding the Upper East Coast Regional Water Supply Plan Update.



## Independent Scientific Review

On June 14, 2004, the DOI, USACE, and SFWMD signed an intergovernmental agreement to engage the National Academy of Science (NAS) in the implementation of Everglades restoration. This agreement addresses requirements established by the Programmatic Regulations (33CFR Part 385). The NAS will convene an Independent Science Review Panel composed of a diverse team of internationally recognized experts in restoration science and provide expert assistance in independently reviewing the progress toward Everglades restoration.

### ***Goal 1 Accomplishments: Getting the Water Right***

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The first strategic goal of the Task Force is “get the water right.” The Task Force has adopted the following subgoals and objectives for this goal:

#### GOAL 1: GET THE WATER RIGHT

##### Subgoal 1-A: Get the hydrology right

Objective 1-A.1: Provide 1.3 million acre-feet of surface water storage by 2036

Objective 1-A.2: Develop Aquifer Storage and Recovery (ASR) systems capable of storing 1.6 billion gallons per day by 2028

Objective 1-A.3: Modify 335 miles of impediments to flow by 2019

##### Subgoal 1-B: Get the water quality right

Objective 1-B.1: Construct 69,000 acres of stormwater treatment areas by 2035

Objective 1-B.2: Prepare plans, with strategies and schedules for implementation, to comply with total maximum daily loads for 100 percent of impaired water bodies by 2011

The major projects planned to meet these objectives are listed in the Task Force strategy in part one of this volume (“Coordinating Success”), along with a schedule for their implementation. The projects or activities that were ongoing or completed during the August 2002 – July 2004 reporting period are described below in the context of progress toward meeting each of the Task Force objectives. The Critical Restoration Projects contribute to various objectives but are grouped together in this biennial report to provide an overview of the progress associated with these early efforts.

## Critical Restoration Projects

The progress made on the nine Critical Restoration Projects authorized under WRDA 1996 to produce immediate, substantial, and independent benefits prior to the CERP is summarized below.

**East Coast Canal Structures (C-4 Structure):** Construction was completed in July 2003, and the project is now operational. This project will help reduce seepage losses from the Everglades, increase aquifer recharge, and enhance habitat in the Pensucco Wetlands.

**Western C-11 Basin Water Quality Treatment:** Construction of the S-9A pump station was completed. A contract for construction of the S-381 divide structure was awarded in September 2003. Construction was initiated in November 2003 and is scheduled for completion by December 2004. During nonflood conditions, these new features will separate seepage from stormwater runoff, allowing the return of seepage waters to WCA-3A.

**Tamiami Trail Culverts:** Construction of the western portion of the project (Phase I), located south of the Southern Golden Gate Estates (Picayune Strand) Restoration Project, started in June 2004. Implementation is being accomplished with SFWMD (culvert construction) and Florida Department of Transportation (road resurfacing) funds. Construction of the eastern portion of the project (Phase II) is dependent upon additional funding. For purposes of improving water quality, this project will help restore more natural hydropatterns and improve sheetflow of surface water within the Ten Thousand Islands National Wildlife Refuge, Rookery Bay Estuarine Research Reserve and Aquatic Preserve, Big Cypress National

Preserve, and Everglades National Park. The cost estimates for completion of this project in combination with the other eight Critical Projects exceed the USACE appropriation cap for the Critical Projects (\$75,000,000) set by WRDA 1996. Congress is considering draft legislation that would raise the cap so that this project may move forward with federal cost-share.

**Seminole Big Cypress Reservation Water Conservation Plan:** Construction of the conveyance canal system on the east side of the reservation (Phase I) was completed in May 2004. Canal pump stations will connect this conveyance canal system to the North Feeder Canal system. The USACE completed the designs for Phase II in April 2004 and plans to award contracts to construct by December 2004. This project will enhance the Big Cypress Reservation's water storage capacity, improve wetland hydrology, enhance flood protection, and reduce the concentration of phosphorus from water flowing off reservation lands. Outflows from the project will be routed southward and to the current West Feeder Canal system on the reservation to rehydrate the undeveloped native area and the Big Cypress National Preserve.

**Southern CREW Addition/Imperial River Flowway:** This project was approximately 80 percent complete at the end of the reporting period, with construction proceeding as restoration lands were acquired. It is anticipated that land acquisition will be completed by the end of 2005. This project will restore historical sheetflow in the project area, reduce freshwater discharges to Estero Bay during the rainy season, reduce loading of nutrients to the Imperial River and Estero Bay, and reduce flooding of homes and private lands west of the project area. The cost estimates for this project in combination with the other eight Critical Projects exceed the USACE appropriation cap for the Critical Projects (\$75,000,000) set by WRDA 1996. Congress is considering draft legislation that would raise the cap so that this project may move forward with federal cost-share. Meanwhile, the SFWMD has entered into a grant cost-share agreement under which the DOI is providing matching funds for acquisition of the lands needed for this project.

**Lake Okeechobee Water Retention/Phosphorus Removal:** Construction of the Taylor Creek and Nubbin Slough STAs was initiated in 2004. Competitive bidding for the Grassy Island STA closed on March 9, 2004. Assuming the contractor selection proceeds on schedule, construction will start in the summer of 2004.

**Ten Mile Creek Water Preservation Area:** A groundbreaking ceremony was held on November 7, 2003. Construction and operation of this reservoir and associated STA will be an important test of the effectiveness of facilities that are proposed on a much larger scale throughout the CERP. Detailed monitoring of the reservoir will give practical information about how well the reservoir can capture nutrients on its own, prior to treatment in the STA, and about fish and wildlife use of the reservoir and whether species can persist under the greatly fluctuating hydrologic regime. This project will attenuate flows and improve water quality to the St. Lucie Estuary and Indian River Lagoon.

**Lake Trafford Restoration:** Construction plans and specifications were completed and the containment area for dredged material was under construction by the end of the reporting period. Dredging of the lake is dependent upon availability of additional funding. This project will improve water quality and enhance fish and wildlife habitat in Lake Trafford by removing approximately 2.85 million cubic yards of organic sediments that blanket the bottom of the lake. The cost estimates for completion of this project in combination with the other eight Critical Projects exceed the USACE appropriation cap for the Critical Projects (\$75,000,000) set by WRDA 1996. Congress is considering draft legislation that would raise the cap so that this project may move forward with federal cost-share. Meanwhile, the SFWMD is moving forward with detailed design and construction with the intent of receiving credit and/or reimbursement from the USACE if Congress authorizes the increase in the federal cap for Critical Projects. The USACE and the SFWMD are evaluating options to reduce the costs while still achieving restoration objectives.

**Florida Keys Carrying Capacity Study:** A user's manual for the *Florida Keys Carrying Capacity Study* was made available in March 2003. The manual provides local planners and decision makers with an impact assessment model and planning tool to determine if and how their comprehensive plans should be amended.

#### Objective 1-A.1: Provide 1.3 million acre-feet of surface water storage by 2036

At the end of the reporting period, nine of the projects contributing to objective 1-A.1 were underway, along with a technology pilot to determine the feasibility of the two Lake Belt storage projects.

**Biennial Report Table 1. July 2004 Status of Projects to Provide 1.3 million Acre-Feet of Surface Water Storage by 2036**

| Project ID | Project Endpoint | Project Name                                                                                                           | Output (acre-feet) <sup>3</sup> | Status   |
|------------|------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------|
| 2100       | TBD              | Allapattah Flats*                                                                                                      | 32,000                          | Underway |
| 1111       | 2005             | Ten Mile Creek                                                                                                         | 5,000                           | Underway |
| 1100       | 2009             | Acme Basin B Discharge                                                                                                 | 3,800                           | Underway |
| 1102       | 2009             | Everglades Agricultural Area Storage Reservoir, Phase 1                                                                | 240,000                         | Underway |
| 1104       | 2013             | Lake Okeechobee Watershed                                                                                              | 250,000                         | Underway |
| 1103       | 2014             | Everglades Agricultural Area Storage Reservoir, Phase 2                                                                | 120,000                         | Underway |
| 1108       | 2018             | Bird Drive Recharge Area                                                                                               | 11,500                          |          |
| 1109       | 2019             | C-43 Basin Storage Reservoir and ASR                                                                                   | 160,000                         | Underway |
| 1106       | 2020             | Palm Beach County Agricultural Reserve Reservoir and ASR                                                               | 20,000                          |          |
| 1107       | 2024             | Site 1 Impoundment and Aquifer Storage and Recovery                                                                    | 15,000                          | Underway |
| 1101       | 2033             | Indian River Lagoon South, C-44 Basin Storage Reservoir and C-23/C-24/C-25/Northfork and Southfork Storage Reservoirs* | 190,000                         | Underway |
| 1110       | 2035             | Central Lake Belt Storage                                                                                              | 190,000                         |          |
| 1105       | 2036             | North Lake Belt Storage                                                                                                | 90,000                          |          |

#### Everglades Agricultural Area Storage Reservoir, Phase I

The preliminary survey and geotechnical work on the expedited reservoir was completed in May 2004; 30 percent design commenced in June 2004, with a restoration endpoint finish date of February 2005. In late April the U.S. Sugar Corporation agreed to vacate leased, state-owned land (former Talisman Sugar Company property) just south of Lake Okeechobee, allowing the SFWMD to expedite work on this large reservoir and stormwater treatment area.

#### C-43 Basin Storage Reservoir and ASR

The USACE and SFWMD completed the initial steps in the planning process and entered the plan formulation phase. The SFWMD initiated the 30 percent design of the reservoir at Berry Groves. Technical uncertainties associated with the high-capacity C-43 Basin ASR feature are currently being investigated by the Caloosahatchee River Basin ASR Pilot Project (see below). The results of this pilot project, along with the ASR Regional Study, will form the basis for future feasibility studies or project implementation reports concerning high-capacity ASR.

#### Lake Belt In-Ground Reservoir Technology Pilot

A site ("North Stairstep") with similar geology to the full-scale in-ground reservoir site was selected to test whether installing a barrier around a rock-mined area used as a reservoir can adequately protect

<sup>3</sup> The outputs listed in **Error! Reference source not found.** and the measures and restoration endpoints in **Error! Reference source not found.** (the Integrated Financial Plan Summary table) reflect the strategic goals and are not intended to function as an allocation or reservation of water, which must be implemented through applicable law.

\* Some Projects have been combined with others since 2002

against potential adverse impacts associated with seepage. The technology pilot is required to determine whether the two full-scale Lake Belt Storage Area CERP components can be successfully constructed and operated to supply environmental and water supply deliveries.

**Objective 1-A.2: Develop aquifer storage and recovery systems capable of storing 1.6 billion gallons per day by 2028**

**Biennial Report Table 2. July 2004 Status of Projects to Develop Aquifer Storage and Recovery Systems Capable of Storing 1.6 Billion Gallons per Day by 2028**

| Project ID | Project Endpoint | Project Name                                             | Output (million gpd) <sup>4</sup> | Status   |
|------------|------------------|----------------------------------------------------------|-----------------------------------|----------|
| 1109       | 2019             | C-43 Basin Storage Reservoir and ASR                     | 220                               | Underway |
| 1106       | 2020             | Palm Beach County Agricultural Reserve Reservoir and ASR | 75                                |          |
| 1200       | 2021             | C-51 Regional Groundwater Aquifer Storage and Recovery   | 170                               |          |
| 1107       | 2024             | Site 1 Impoundment and Aquifer Storage and Recovery      | 150                               | Underway |
| 1201       | 2028             | Lake Okeechobee Aquifer Storage and Recovery             | 1,000                             | Underway |

A combined *Draft Pilot Project Design Report and Environmental Impact Statement*, the decision-making document for engineering options for the three ASR pilot project field tests (Hillsboro, Lake Okeechobee, and Caloosahatchee River Basin), was released in May 2004 for public review and comment. The field tests and other evaluations are required to address technical uncertainties before the SFWMD and USACE can determine the feasibility of full-scale implementation of ASR technology as proposed in the CERP. The interrelated nature of these pilot projects led to the decision to combine the associated design efforts into a single decision document.

The USACE and SFWMD conducted a geotechnical investigation of the proposed site for the Caloosahatchee River Basin ASR Pilot Project and initiated the design of a water treatment and conveyance system that includes the use of engineered subsurface filtration coupled with ultraviolet disinfection. The surface facility design is 90 percent complete. An exploratory well was constructed at the site and was in the final stages of testing at the end of the reporting period.

**Objective 1-A.3: Modify 335 miles of impediments to flow by 2019**

At the end of the reporting period, one of the projects contributing to objective 1-A.3 was completed and the rest were underway.

**Biennial Report Table 3. July 2004 Status of Projects to Modify 335 Miles of Impediments to Flow by 2019**

| Project ID | Project Endpoint | Project Name                         | Output (miles modified) | Status    |
|------------|------------------|--------------------------------------|-------------------------|-----------|
| 1305       | 1997             | Kissimmee Prairie Ecosystem          | 39.3                    | Completed |
| 1304       | 2004             | East WCA-3A Hydropattern Restoration | Need output             | Underway  |
| 1300       | 2008             | Canal 111                            | 4                       | Underway  |
| 1307       | 2008             | Modified Waters Delivery Project     | 21                      | Underway  |

**Comment [LF6]:** Follow up with Project Manager - through Marsha Waiting input on miles modified -

<sup>4</sup> The outputs listed in **Error! Reference source not found.** and the measures and restoration endpoints in **Error! Reference source not found.** (the Integrated Financial Plan Summary table) reflect the strategic goals and are not intended to function as an allocation or reservation of water, which must be implemented through applicable law.

| Project ID | Project Endpoint | Project Name                                           | Output (miles modified) | Status   |
|------------|------------------|--------------------------------------------------------|-------------------------|----------|
| 1306       | 2012             | Kissimmee River Restoration                            | 22                      | Underway |
| 1302       | 2018             | Florida Keys Tidal Restoration                         | 0.6                     | Underway |
| 1301       | 2019             | WCA-3 Decompartmentalization and Sheetflow Enhancement | 240                     | Underway |

#### **Kissimmee River Restoration Project**

Approximately 12,000 acres of river floodplain and wetlands were reestablished as a result of continuous flows along a 15-mile section of the river during the reporting period (following the backfilling of 7 miles of the C-38 Canal in 2001). Approximately 85 percent of the total 105,000 acres needed for restoration has been acquired.

The scheduled completion date for the Kissimmee River Restoration Project was changed from 2010 to 2012. Upon completion, the project, which is being jointly implemented and cost-shared by the SFWMD and the USACE, will eliminate two major water control structures and restore over 40 square miles of river/floodplain ecosystem, including 43 miles of meandering river channel and 27,000 acres of wetlands.

#### **Canal 111 Project**

The January 2002 *Final Integrated General Evaluation Report and Supplemental Environmental Impact Statement* addressing the addition of features for water quality improvement and a land exchange between Everglades National Park and the SFWMD was approved by the SFWMD Governing Board. The report is still under review by the USACE. The C-111 Project will help restore flows from Taylor Slough to Florida Bay.

#### **Modified Water Deliveries to Everglades National Park (MWD) Project**

This project was initially authorized by the Everglades National Park Protection and Expansion Act in 1989 to improve water deliveries to Everglades National Park. Due to concerns over delays and the development of the larger CERP in WRDA 2000, Congress made the appropriation of funds for construction of components of the CERP WCA-3 Decompartmentalization and Sheetflow Enhancement Project and the Central Lakebelt Storage Project contingent on the completion of the Modified Water Deliveries Project.

The *Final General Reevaluation Report and Supplemental Environmental Impact Statement* for the Tamiami Trail portion of the MWD Project was completed in December 2003. The selected plan includes constructing a 3,000-foot bridge and raising the pavement of the eastern section of the roadbed. Negotiations with the Florida DOT on roadway relocation requirements are taking place, and initial geotechnical investigation of the project site has commenced. In addition, construction of the S-356 pump station and removal of 4 miles of the L67 extension levee have been completed. Plans and specifications have been completed for S-333 modifications.

Regarding the 8.5 Square Mile Area, the USACE completed engineering and design for Alternative 6d features (pump station S-357, a seepage canal and levee, and an STA) in May 2004. The construction contract was awarded in July 2004, with construction scheduled for completion in August 2005. Of the 743 tracts of land required for the project, 361 have been acquired. All real estate acquisitions are scheduled for completion by June 2005. Demolition of structures on tracts of land owned by the government within the construction footprint was 78 percent complete at the end of the reporting period.

## Other Related Hydrology Projects

### Seepage Management Pilot

The alternatives for seepage management technologies were screened to a total of five candidate technologies. Wells were installed to capture baseline groundwater flow data. The purpose of this project is to investigate seepage management technologies to control seepage from Everglades National Park and to provide necessary information to determine the appropriate amount of wet season groundwater flow to return to the park while minimizing potential impacts to Miami-Dade County's west wellfield and freshwater flows to Biscayne Bay.

### Objective 1-B.1: Construct 69,000 acres of stormwater treatment areas by 2035

At the end of the reporting period, two of the projects contributing to objective 1-B.1 were completed, and ten were underway.

**Biennial Report Table 4. July 2004 Status of Projects to Construct 69,000 Acres of Stormwater Treatment Areas by 2035**

| Project ID | Project End Date | Project Name                                                                                                                              | Output (acres) | Status    |
|------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|
| 1508       | 2003             | STA-1 West Works and Outflow Pump Station                                                                                                 | 6,700          | Completed |
| 1509       | 2004             | STA-2 Works and Outflow Pump Station                                                                                                      | 6,430          | Completed |
| 1511       | 2005             | STA-5 Works                                                                                                                               | 4,118          | Underway  |
| 1510       | 2005             | STA-3/4 Works                                                                                                                             | 16,600         | Underway  |
| 1506       | 2006             | Lake Okeechobee Water Retention/Phosphorus Removal                                                                                        | 940            | Underway  |
| 1512       | 2006             | STA-6                                                                                                                                     | 2,222          | Underway  |
| 1414       | 2007             | Henderson Creek/Belle Meade Restoration                                                                                                   | 10             | Underway  |
| 1502       | 2010             | Miccosukee Tribe Water Management Plan                                                                                                    | 900            | Underway  |
| 1501       | 2011             | Broward County WPA - C-9 STA and Impoundment and Western C-11 Diversion Impoundment and Canal and WCAs 3A and 3B Levee Seepage Management | 4,100          | Underway  |
| 1513       | 2014             | West Palm Beach Canal (C-51) and STA-1E                                                                                                   | 6,500          | Underway  |
| 1104       | 2014             | Lake Okeechobee Watershed                                                                                                                 | 11,875         | Underway  |
| 1503       | 2019             | North Palm Beach County                                                                                                                   | 1,260          | Underway  |
| 1500       | 2019             | Big Cypress/L-28 Interceptor Modifications                                                                                                | 1,900          |           |
| 1505       | 2020             | Caloosahatchee Backpumping with Stormwater Treatment                                                                                      | 5,000          |           |
| 1110       | 2035             | Central Lake Belt Storage Area                                                                                                            | 640            |           |

### Everglades Construction Project

As of June 2004, over 35,000 acres of stormwater treatment areas (STAs) had been constructed by the SFWMD. Almost 30,000 acres were in flow-through operation and removing total phosphorus that otherwise would have gone into the EPA. During water year 2004<sup>5</sup>, STA-1W, STA-2, STA-3/4, STA-5, and STA-6 Section 1 removed more than 87 metric tons of total phosphorus, bringing the total removal to over 425 tons since 1994. Inflow concentrations averaged 136 ppb, while the outflow concentrations averaged 42 ppb. STA performance varied, ranging from 13-14 ppb for STA-2 and STA-6, to almost 100 ppb for STA-5. Portions of the stormwater treatment areas were being managed for submerged aquatic vegetation, and the remainder for cattails and other emergent vegetation.

Everglades restoration is now focused on developing biologically based ("green") technologies to the maximum extent possible. This approach is based on manipulating hydrology together with selective vegetation management to create a wetland plant community dominated by emergent plants, submerged aquatic vegetation (SAV), or periphyton (algae). Research has indicated that SAV and periphyton-based

<sup>5</sup> A "water year" is from May 1 through April 30 of the following calendar year. This period is used instead of calendar year because it more closely matches South Florida weather patterns - wet season and dry season.

STA (PSTA) have the potential to reach restoration endpoint total phosphorus levels on a consistent basis. One scenario for improving performance in the STAs envisions that these wetlands would be reconfigured internally to contain sequences of cells dominated by emergent plants followed by cells dominated by SAV. Another possible scenario would sequence cells dominated by emergent plants followed by SAV followed by PSTA. The SFWMD and the Florida DEP will continue to investigate ways to exploit green technologies for use in Everglades restoration.

The most significant milestone during this last reporting period was the completion of construction of STA-3/4, the world's largest constructed wetland at over 16,500 acres. On January 15, 2004, the 6,500-acre flowway 1 of STA-3/4 passed the start-up requirements of the operating permits, and on February 25, 2004, the first discharges of treated water from this STA began. On June 7, the 3,500-acre Cell 3 began discharging. The remainder of STA-3/4 is presently in a vegetation start-up phase and is expected to begin flow-through operations soon. The SFWMD began the design and implementation of enhancements to STA-3/4, intended to further lower phosphorus levels. Key components include additional levees and water control structures, refined operations, and revisions to the vegetation communities, including a 400-acre demonstration PSTA within the footprint of STA-3/4. These enhancements, along with enhancements to the other five STAs, will continue through the end of 2006.

The construction of STA-1E was substantially completed by the USACE in June 2004. A 6- to 18-month vegetation start-up period is anticipated before STA-1E is expected to discharge to the ARM Loxahatchee National Wildlife Refuge, depending on growth of the vegetation. The preliminary design stage for the PSTA field-scale demonstration for cell 4S of STA-1E was completed.

**Objective 1-B.2: Prepare plans to comply with total maximum daily loads for 100 percent of impaired water bodies by 2011**

By the end of the reporting period, the Florida DEP had addressed 16 percent of the total TMDLs that were to be addressed according to the 1998 303(d) list.

**Biennial Report Table 5. July 2004 Status of Project to Prepare Plans to Comply with Total Maximum Daily Loads for 100 Percent of Impaired Water Bodies by 2011**

| Project ID | Project End Date | Project Name                               | Output (% of waters having plans) | Status   |
|------------|------------------|--------------------------------------------|-----------------------------------|----------|
| 1600       | TBD              | Total Maximum Daily Load for South Florida |                                   | Underway |

The USACE and the Florida DEP, based on a process to prioritize CERP projects, decided to postpone the Water Quality Feasibility Study. At this point in time, the FDEP has not decided when and how it will move forward with the study.

## ***Goal 2 Accomplishments: Restoring, Preserving, and Protecting Natural Habitats and Species***

The second strategic goal of the Task Force is "restore, preserve, and protect natural habitats and species." The Task Force has adopted the following subgoals and objectives for this goal:

**GOAL 2: RESTORE, PRESERVE, AND PROTECT NATURAL HABITATS AND SPECIES**

**Subgoal 2-A: Restore, preserve, and protect natural habitats**

Objective 2-A.1: Complete acquisition of 5.8 million acres of land identified for habitat protection by 2015.

Objective 2-A.2: Protect 20 percent of the coral reefs by 2010

Objective 2-A.3: Improve habitat quality for 2.4 million acres of natural areas in South Florida

**Subgoal 2-B: Control invasive exotic plants**



- Objective 2-B.1: Coordinate the development of management plans for the top twenty South Florida invasive exotic plant species by 2011  
Objective 2-B.2: Achieve maintenance control of Brazilian pepper, melaleuca, Australian pine, and Old World climbing fern on South Florida's public conservation lands by 2020  
Objective 2-B.3: Complete an invasive exotic plant species prevention, early detection, and eradication plan by 2005

The major projects planned to meet these objectives are listed in the Task Force strategy in part one of this volume ("Coordinating Success"), along with a schedule for their implementation. The projects or activities that were ongoing or completed during FY 2002-04 are described below in the context of progress toward meeting each of the Task Force objectives.

**Objective 2-A.1: Complete acquisition of 5.8 million acres of land identified for habitat protection by 2015**

By the end of the reporting period, state and federal agencies had acquired a total of approximately 4.7 million acres of land identified for habitat protection. As of June 2004 the state had acquired 3.6 million acres of habitat conservation land in South Florida at a cost of over \$2 billion.

**Biennial Report Table 6. July 2004 Status of Projects to Complete Acquisition of 5.8 Million Acres of Land Identified for Habitat Protection by 2015**

| Project ID           | Project Endpoint | Project Name                                 | Output              |                        |                                |
|----------------------|------------------|----------------------------------------------|---------------------|------------------------|--------------------------------|
|                      |                  |                                              | Total Project Acres | Acres Acquired to Date | Acres Remaining To Be Acquired |
| STATE/SFWMD PROJECTS |                  |                                              |                     |                        |                                |
| 2100                 |                  | Allapattah Flats/Ranch                       | 35,999              | 21,407                 | 14,592                         |
| 2101                 |                  | Atlantic Ridge Ecosystem                     | 15,698              | 11,764                 | 3,934                          |
| 2102                 |                  | Babcock Ranch                                | 91,361              | 0                      | 91,361                         |
| 2103                 |                  | Barfield Ranch                               | 1,367               | 0                      | 1,367                          |
| 2104                 |                  | Belle Meade                                  | 28,506              | 17,812                 | 10,694                         |
| 2105                 |                  | Big Bend Swamp/Holopaw Ranch                 | 59,849              | 0                      | 59,849                         |
| 2106                 |                  | Biscayne Coastal Wetlands                    | 2,241               | 144                    | 2,097                          |
| 2107                 |                  | Bombing Range Ridge                          | 41,748              | 5,293                  | 36,455                         |
| 2108                 |                  | Caloosahatchee Ecoscape                      | 18,497              | 3,180                  | 15,317                         |
| 2109                 |                  | Catfish Creek                                | 14,901              | 10,184                 | 4,717                          |
| 2111                 |                  | Charlotte Harbor Estuary/Flatwoods/Cape Haze | 15,054              | 10,603                 | 4,451                          |
| 2112                 |                  | Corkscrew Reg. Ecosystem Watershed (CREW)    | 64,103              | 25,644                 | 38,459                         |
| 2114                 |                  | Coupon Bight/Key Deer/Big Pine Key           | 3,638               | 1,453                  | 2,185                          |
| 2115                 |                  | Cypress Creek/Trail Ridge                    | 13,788              | 3,285                  | 10,503                         |
| 2172                 |                  | Cypress Creek/Loxahatchee                    | 4,347               | 4,276                  | 71                             |
| 2185                 |                  | Devils Garden                                | 82,508              | 0                      | 82,508                         |
| 2117                 |                  | East Coast Buffer/Water Preserve Areas       | 66,809              | 21,680                 | 45,129                         |
| 2118                 |                  | Estero Bay                                   | 15,572              | 9,045                  | 6,528                          |
| 2119                 |                  | Everglades Agricultural Area/Talisman        | 51,210              | 50,794                 | 416                            |
| 2120                 |                  | Fakahatchee Strand                           | 80,332              | 60,902                 | 19,430                         |
| 2121                 |                  | Fisheating Creek                             | 176,760             | 59,910                 | 116,850                        |
| 2122                 |                  | Florida Keys Ecosystem                       | 8,566               | 1,818                  | 6,748                          |
| 2123                 |                  | Frog Pond/L31N                               | 10,450              | 9,713                  | 737                            |
| 2174                 |                  | Half Circle L Ranch                          | 10,500              | 0                      | 10,500                         |
| 2175                 |                  | Hen Scratch Ranch                            | 2,880               | 0                      | 2,880                          |
| 2124                 |                  | Indian River Lagoon Blueway                  | 5,136               | 1,619                  | 3,517                          |
| 2125                 |                  | Juno Hills /Dunes                            | 590                 | 336                    | 254                            |
| 2176                 |                  | Jupiter Ridge                                | 287                 | 223                    | 64                             |
| 2127                 |                  | Kissimmee River (Lower Basin)*               | 68,332              | 52,023                 | 16,309                         |
| 2128                 |                  | Kissimmee River (Upper Basin)*               | 36,763              | 34,981                 | 1,782                          |
| 2126                 |                  | Kissimmee-St. Johns River Connector          | 9,463               | 0                      | 9,463                          |
| 2129                 |                  | Lake Wales Ridge Ecosystem                   | 13,848              | 9,864                  | 3,984                          |
| 2132                 |                  | Loxahatchee Slough                           | 15,200              | 15,056                 | 144                            |

**Comment [LF7]:** There are no target or endpoint dates in this table – should this column be deleted here?



| Project ID                 | Project Endpoint | Project Name                                         | Output              |                        |                                |
|----------------------------|------------------|------------------------------------------------------|---------------------|------------------------|--------------------------------|
|                            |                  |                                                      | Total Project Acres | Acres Acquired to Date | Acres Remaining To Be Acquired |
| 2133                       |                  | McDaniel Ranch                                       | 7,000               | 0                      | 7,000                          |
| 2134                       |                  | Miami Dade County Archipelago                        | 858                 | 505                    | 353                            |
| 2135                       |                  | Model Lands Basin                                    | 42,402              | 14,799                 | 27,603                         |
| 2138                       |                  | North Fork of the St. Lucie River                    | 3,800               | 474                    | 3,326                          |
| 2139                       |                  | North Key Largo Hammocks                             | 4,513               | 3,538                  | 975                            |
| 2140                       |                  | North Savannas                                       | 930                 | 0                      | 930                            |
| 2141                       |                  | Okaloacoochee Slough                                 | 37,210              | 34,982                 | 2,228                          |
| 2142                       |                  | Okeechobee Battlefield                               | 56                  | 0                      | 56                             |
| 2143                       |                  | Osceola Pine Savannas                                | 1,374               | 1,333                  | 41                             |
| 2144                       |                  | Pal-Mar                                              | 36,745              | 20,786                 | 15,959                         |
| 2145                       |                  | Panther Glades                                       | 53,894              | 21,724                 | 32,170                         |
| 2146                       |                  | Paradise Run                                         | 4,265               | 3,328                  | 937                            |
| 2147                       |                  | Parker-Poinciana/Lake Hatchineha Watershed           | 6,437               | 0                      | 6,437                          |
| 2148                       |                  | Pineland Site Complex                                | 206                 | 57                     | 149                            |
| 2178                       |                  | Ranch Reserve                                        | 2,217               | 67                     | 2,150                          |
| 2149                       |                  | Rookery Bay                                          | 18,721              | 18,576                 | 145                            |
| 2150                       |                  | Rotenberger/Holey Land Tract                         | 79,170              | 70,833                 | 8,337                          |
| 2151                       |                  | Shingle Creek                                        | 7,655               | 1,457                  | 6,198                          |
| 2152                       |                  | Six Mile Cypress I & II                              | 1,966               | 1,864                  | 102                            |
| 2154                       |                  | South Savannas                                       | 6,046               | 5,182                  | 864                            |
| 2155                       |                  | Southern Glades                                      | 37,620              | 33,576                 | 4,044                          |
| 2156                       |                  | Southern Golden Gate Estates                         | 55,247              | 54,282                 | 965                            |
| 1508-1512                  |                  | STA 1 W, 2, 3/4, 5 and 6                             | 41,089              | 41,043                 | 46                             |
| 2158                       |                  | Twelve Mile Slough                                   | 15,653              | 7,486                  | 8,167                          |
| 2181                       |                  | Upper Econ Mosaic                                    | 16,595              | 918                    | 15,677                         |
| 2159                       |                  | Upper Lakes Basin Watershed (ULBW)                   | 47,300              | 12,550                 | 34,750                         |
| 2160                       |                  | WCAs 2 and 3                                         | 721,433             | 670,844                | 50,589                         |
| STATE COMPLETED PROJECTS   |                  |                                                      |                     |                        |                                |
| 2110                       |                  | Cayo Costa Island                                    | 1,954               | 1,954                  | 0                              |
| 2113                       |                  | Corkscrew Regional Mitigation Bank                   | 633                 | 633                    | 0                              |
| 2116                       |                  | Dupuis Reserve                                       | 21,875              | 21,875                 | 0                              |
| 1305                       |                  | Kissimmee Prairie                                    | 38,282              | 38,282                 | 0                              |
| 2130                       |                  | Lake Walk-In-Water                                   | 4,009               | 4,009                  | 0                              |
| 2131                       |                  | Loxahatchee River Land Acquisition                   | 1,936               | 1,936                  | 0                              |
| 2137                       |                  | Nicodemus Slough                                     | 2,231               | 2,231                  | 0                              |
| 2153                       |                  | South Fork St. Lucie River Land Acquisition          | 184                 | 184                    | 0                              |
| 1513                       |                  | STA 1 E                                              | 6,503               | 6,503                  | 0                              |
| 1111                       |                  | Ten Mile Creek                                       | 913                 | 913                    | 0                              |
| 2157                       |                  | Tibet-Butler Preserve                                | 439                 | 439                    | 0                              |
| 2161                       |                  | Yamato Scrub                                         | 207                 | 207                    | 0                              |
| FCT, STATE PARKS, & WMA'S  |                  |                                                      |                     |                        |                                |
|                            |                  | State Florida Communities Trust Lands                | 18,122              | 18,121                 | 0                              |
|                            |                  | State Park Lands                                     | 101,438             | 88,375                 | 13,063                         |
|                            |                  | State Wildlife Management Areas                      | 126,867             | 126,577                | 290                            |
| FEDERAL CONSERVATION LANDS |                  |                                                      |                     |                        |                                |
| 2162                       |                  | A.R.M. Loxahatchee NWR                               | 145,567             | 143,874                | 1,693                          |
| 2164                       |                  | Big Cypress National Preserve Addition               | 146,117             | 143,161                | 2,956                          |
| 2163                       |                  | Big Cypress National Preserve                        | 574,446             | 573,614                | 835                            |
| 2165                       |                  | Biscayne National Park                               | 172,924             | 172,542                | 382                            |
| 2166                       |                  | Crocodile Lake NWR                                   | 7,100               | 6,688                  | 412                            |
| 2167                       |                  | East Everglades Addition to Everglades National Park | 109,504             | 108,524                | 980                            |
| 2169                       |                  | Florida Panther NWR                                  | 61,573              | 61,563                 | 10                             |
| 2168                       |                  | Florida Keys NWR                                     | 415,436             | 410,041                | 5,395                          |
| 2170                       |                  | Hobe Sound NWR                                       | 1,130               | 1,034                  | 96                             |
| 2171                       |                  | J. N. Ding Darling NWR                               | 10,275              | 8,605                  | 1,670                          |
| 2168                       |                  | Key West NWR                                         | 208,308             | 208,308                | 0                              |

| Project ID                      | Project Endpoint | Project Name | Output              |                        |                                |
|---------------------------------|------------------|--------------|---------------------|------------------------|--------------------------------|
|                                 |                  |              | Total Project Acres | Acres Acquired to Date | Acres Remaining To Be Acquired |
| GRAND TOTAL HABITAT ACQUISITION |                  |              | 5,750,151           | 4,868,416              | 881,736                        |

### Land Acquisition Strategy and Data Base

The Task Force Land Acquisition Team (LAT) presented the first *Land Acquisition Strategy* to the Task Force, and after some improvements the Task Force accepted it on February 4, 2003. The land acquisition strategy was developed as a response to a recommendation by the GAO for a land acquisition plan to identify and prioritize additional lands needed to achieve the restoration goals. The GAO highlighted the importance of acquiring as much land as possible, and quickly, because undeveloped land in South Florida is becoming increasingly scarce and costly.

The LAT submitted updated land acquisition data to the Task Force in December 2003. The LAT was successful in adding representatives of the 16 counties in the watershed, making it possible to include county acquisitions in support of restoration, which are not tracked by the state or federal agencies. This information has been incorporated into the 2004 update to the data base.

### Habitat Acquisition

The federal, state, and local accomplishments in land acquisition during the reporting period are shown in **Error! Reference source not found. BR.**

**Biennial Report Table 7. Land Acquisition Expenditures Summary, 2002-2004<sup>6</sup>**

| Funding Source                                    | Amount (\$ millions) | Acres         |
|---------------------------------------------------|----------------------|---------------|
| Farm Bill 1996 <sup>7</sup>                       | \$ 16.37             | 2,588         |
| Florida Forever                                   | 155.7                | 55,869        |
| Save Our Everglades Trust Fund                    | 108.9                | 9,631         |
| State, Local & Other Funding Sources <sup>8</sup> | 95.9                 | 16,640        |
| Land & Water Conservation Fund <sup>9</sup>       | 7.3                  | 6,666         |
| <b>TOTALS</b>                                     | <b>\$384.17</b>      | <b>91,394</b> |

### Southern Golden Gate Estates (Picayune Strand) CERP Restoration Project

The State of Florida initiated an early start on this hydrologic restoration project in October 2003. Phase I will backfill portions of the Prairie Canal and remove roads to restore sheet flow. This first phase will

<sup>6</sup> The fiscal year for FDEP is July 1 through June 30. The fiscal year for the SFWMD, the FWS, and the NPS is October 1 through September 30.

<sup>7</sup> Some acres were jointly acquired using state funds.

<sup>8</sup> The following funding sources are captured in this category: SFWMD ad valorem, county, mitigation, special state appropriations, Preservation 2000, Land Acquisition Trust Fund, and Water Management Lands Trust Fund.

<sup>9</sup> The Land and Water Conservation Fund is administered by the DOI.

reduce drainage of the adjacent Fakahatchee Strand State Preserve and restore habitat for threatened and endangered species.

**Comment [Gs8]:** Not a land acquisition project? Or if so, move to the end of the discussion.

#### Objective 2-A.2: Protect 20 percent of the coral reefs by 2010

At the end of the reporting period, one of the projects contributing to objective 2-A.2 was completed. Other projects remained to be identified.

**Biennial Report Table 8. July 2004 Status of Projects to Protect 20 Percent of the Coral Reefs by 2010**

| Project ID | Project End Date | Project Name                                              | Output (percent of reefs protected)  | Status    |
|------------|------------------|-----------------------------------------------------------|--------------------------------------|-----------|
|            | 2004             | Florida Keys National Marine Sanctuary Zoning Action Plan | 10+ percent of reefs in Florida Keys | Completed |

#### Florida Keys National Marine Sanctuary Zoning Plan

The Florida Keys National Marine Sanctuary has implemented a marine zoning action plan that includes a network of fully protected areas, including two ecological reserves (Western Sambo and Tortugas Ecological Reserves), eighteen sanctuary preservation areas, and four research only areas. Combined, these areas fully protect 10 percent of the coral reef resources in the Sanctuary. The Sanctuary has met the goal of protecting 10 percent of the coral reefs in this region by 2004. It is monitoring the biological, ecological, and socioeconomic changes resulting from the full protection of these areas and will use the information learned to extend protection to 20 percent of the coral reefs by 2010.

#### Objective 2-A.3: Improve Habitat Quality for 2.4 million acres of natural areas

**Biennial Report Table 9. July 2004 Status of Projects to Improve Habitat Quality for 2.4 Million Acres of Natural Areas**

| Project ID | Project Endpoint | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Output | Status |
|------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|
|            |                  | <i>Note – The April 1999 USACE C&amp;SF Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement</i> included an extensive environmental evaluation of habitat units that would be improved through implementation of the CERP projects. Table 7-18 in this publication identifies in detail which projects are anticipated to achieve this objective. However, appropriate measures by project are currently being developed through the establishment of interim goals. There are some projects included in our tracking matrix that exemplify how this objective will be achieved. |        |        |

#### Loxahatchee National Wildlife Refuge Prescribed Burn Program

In June 2003 the Arthur R. Marshall Loxahatchee National Wildlife Refuge conducted a prescribed burn on 2,300 acres of the refuge interior (the first burn in almost 20 years). The vegetative response was almost immediate, with healthy sawgrass sprouting in areas opened up by the fire. Waterfowl were observed using the burned areas.

#### Indian River Lagoon South

The *Indian River Lagoon Feasibility Study* was completed in October 2002. The *Final Project Implementation Report* for the Indian River Lagoon Project was published in the *Federal Register* on May 7, 2004, and

**Comment [Gs9]:** This project is in the matrix under 1A1 but not 2A3. Should matrix be updated?

Congressional authorization could potentially occur in late 2004. The project will increase the spatial extent of the Everglades by restoring approximately 90,000 acres of wetland/upland mosaic and 4,000 acres of estuary within the St. Lucie River and Southern Indian River Lagoon.

#### **The Loxahatchee Impoundment Landscape Assessment (LILA)**

The FWS signed a cooperative agreement with the SFWMD to conduct long-term research on two impoundments on the Arthur R. Marshall Loxahatchee NWR, needed to inform the development of several CERP performance measures of a healthy South Florida Ecosystem. LILA will serve as a pilot study for hydrologic regimes proposed under the CERP. The approach will be to sculpt key Everglades landscape features, overlay controlled hydrologic regimes with flow rates that simulate historic flows, and measure responses by wading birds, tree islands, and ridge and slough communities. LILA provides a unique opportunity to fill key information gaps of the CERP and to provide the public with a rare opportunity to see restored Everglades habitats.

#### **Other Natural Habitat and Species Projects**

##### **Florida Panther Landscape Conservation Strategy**

The Panther Subteam's *Landscape Conservation Strategy for the Florida Panther in South Florida* was submitted to the FWS in December 2002. This strategy identifies lands essential for the continued conservation of panthers in South Florida, and also a landscape linkage to provide for population expansion north of the Caloosahatchee River to aid in the recovery of the species. The FWS plans to publish a notice of availability in the *Federal Register* to obtain comments on this document from the broad scientific community and general public to ensure the highest level of quality possible. Comments from the scientific community and general public may result in changes to the landscape conservation strategy.

##### **Florida Panther Regulatory Review Update**

Between January 2002 and November 2003, the FWS preserved through conservation easements or acquisition 6,495 acres of habitat important to Florida panthers. These preserved lands are generally adjacent to larger tracts of publicly owned lands in the core area of the Florida panther population.

##### **Key Deer Recovery**

As part of the FWS program, consistent with the MSRP, to translocate significant numbers of Key deer beyond the boundaries of the core populations, four deer were moved from Big Pine Key to Sugarloaf Key on May 14-15, 2003. Additional recovery activities that have been or will be accomplished with the DOI funding provided for this effort include more translocations, a soft-release enclosure on Cudjoe Key, research and monitoring of translocated deer, and appointing a biologist for project oversight and continuity.

##### **South Florida Multi-Species Recovery Plan**

A draft implementation schedule for the MSRP was completed in early 2003. The MSRP and the implementation schedule are intended to be used by state and federal agencies, tribes, nongovernmental organizations, and other partners who are committed to endangered species conservation and to restoration of the South Florida Ecosystem. The implementation schedule will assist with prioritizing, planning, and implementing species-specific tasks and various restoration activities.

#### **Objective 2-B-1: Coordinate the development of management plans for the top twenty South Florida invasive exotic plant species by 2011**

At the end of the reporting period, the three projects contributing to objective 2-B.1 were all underway.

**Biennial Report Table 10. July 2004 Status of Projects to Coordinate the Development of Management Plans for the Top Twenty South Florida Invasive Exotic Plant Species by 2011**

| Project ID | Project End Date | Project Name                                                                                                           | Output (plans) | Status                  |
|------------|------------------|------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------|
| 2500       | 2011             | Management plans for melaleuca, Brazilian pepper, Old World climbing fern, hydrilla, water lettuce, and water hyacinth | 6              | 20% completed           |
|            |                  | Remaining plans                                                                                                        | 14             | Prioritization underway |
| 2700       | 2005             | Invasive Exotic Plant Prevention, Early Detection, and Eradication Plan                                                |                | Underway                |

#### Noxious Exotic Weed Task Team (NEWTT)

The first three of five elements were completed in the research contracted to the Environmental Law Institute to explore how existing federal and state authorities can be used to manage invasive species in Florida and to identify gaps in these authorities.

Contractor services were obtained to develop a web-based database of invasive plant control activities being conducted in South Florida. The database will track ongoing activities and find gaps in current control efforts. The database was released in its Beta trial version to the Noxious Exotic Weed Task Team and the Florida Invasive Animal Task Team in March 2004.

#### Objective 2-B.2: Achieve maintenance control of Brazilian pepper, melaleuca, Australian pine, and Old World climbing fern on South Florida's public conservation lands by 2020

**Biennial Report Table 11. July 2004 Status of Projects to Achieve Maintenance Control of Brazilian Pepper, Melaleuca, Australian Pine, and Old World Climbing Fern on South Florida's Public Conservation Lands by 2020**

| Project ID | Project End Date | Project Name                                                                                                     | Output (control) | Status   |
|------------|------------------|------------------------------------------------------------------------------------------------------------------|------------------|----------|
| 2600       | 2020             | Achieve maintenance control status for Brazilian pepper, melaleuca, Australian pine, and Old World climbing fern |                  | Underway |

Current efforts on melaleuca have achieved remarkable success in the use of chemical control on public lands within the EPA. Since the development and release of two biological control insects and the anticipated release of two additional insects, monitoring information indicates that melaleuca may well be a species that will no longer be a serious pest of natural areas in Florida by 2020.

In contrast, the control programs for Brazilian pepper are severely lacking in support and coordination. The state's biological control program has been slow to find and research possible biocontrols, and the control organism that is nearing preparation appears to be held up in administrative regulatory procedures. Brazilian pepper is still and will continue to be an extremely widespread and serious threat to natural areas of Florida.

Australian pine control efforts are not coordinated among all the agencies and areas. However, where control is being conducted, it is quite successful. It appears that this species is relatively simple to control, and once controlled reinvasion can easily be prevented so long as occasional detection is undertaken. It is this latter element that seems to be preventing this species from being controlled at most sites.

Old World climbing fern (*Lygodium*) is still considered the most serious recent invader. Less is known about how to control it than is known about the other high-priority species. Research is being conducted to determine the efficacy of biological and chemical control methods. Recent revisions to the *Lygodium*

management plan spell out the next round of needed research initiatives. While sparsely funded, the biological control program is progressing, and a biocontrol agent for *Lygodium* is expected to be released later this year. In addition, two more insects are under development for release in the near future.

#### **Loxahatchee National Wildlife Refuge Exotic Management.**

More than 17,000 acres of the Arthur R. Marshall Loxahatchee NWR interior were treated for melaleuca and *Lygodium* (Old World climbing fern) during 2002-2003. Australian pine was almost 100 percent controlled.

#### **Melaleuca Control Program - Melaleuca Eradication and Other Exotic Plants Project**

The USACE and the SFWMD amended the CERP design agreement to include this project. A meeting was held on March 25, 2004, to initiate the establishment of teams to conduct the project management plan (PMP) and the project implementation report (PIR).

#### **Gainesville Quarantine and Research Facility**

The Florida Department of Agriculture and Consumer Services do not have funds for this project, so it was cancelled in January 2004.

#### **Special Report on Invasive Species**

The USACE contracted with the DOI invasive species specialist to produce a special report on the federal role in invasive species management for Everglades restoration and to make recommendations on further federal involvement. The first draft of the report was delivered to the USACE for comment. All elements of the report were not yet completed, but the final draft is expected sometime later in 2004. The report will include a review of laws and regulations pertaining to invasive species, with particular attention to the USACE authorities for managing and funding invasive species programs.

#### **Removal of Exotic Plants from Big Cypress National Preserve.**

The Big Cypress preserve estimates that 150 square miles is infested with melaleuca. In the spring of 2003 the preserve staff completed initial chemical treatment of all melaleuca, but because some stems will resprout and seeds are brought in from outside the boundaries, retreatment and monitoring will always be necessary. In fiscal year 2003 the preserve initially treated 54.4 square miles and retreated 49.4 square miles.

#### **Objective 2-B.3: Complete an invasive exotic plant prevention, early detection, and eradication plan by 2005**

**Biennial Report Table 12. July 2004 Status of Project to Complete an Invasive Exotic Plant Prevention, Early Detection, and Eradication Plan by 2005**

| Project ID | Project End Date | Project Name                                                            | Output (plans) | Status   |
|------------|------------------|-------------------------------------------------------------------------|----------------|----------|
| 2700       | 2005             | Invasive Exotic Plant Prevention, Early Detection, and Eradication Plan |                | Underway |

#### **Exotic Species Quarantine Facility**

Construction delays and cost overruns resulted in the facility not being ready within the original timeframe. It is currently expected to open later in 2004.

### Goal 3 Accomplishments: Fostering Compatibility of the Built and Natural Systems

The third strategic goal of the Task Force is “foster compatibility of the built and natural systems.” The Task Force has adopted the following subgoals and objectives for this goal:

#### GOAL 3: FOSTER COMPATIBILITY OF THE BUILT AND NATURAL SYSTEMS

Subgoal 3-A: Use and manage land in a manner compatible with ecosystem restoration

Objective 3-A.1: Designate an additional 480,000 acres as part of the Florida Greenways and Trails System by 2008

Objective 3-A.2: Increase participation in the Voluntary Farm Bill conservation programs by 230,000 acres by 2014

Objective 3-A.3: Acquire an additional 2,500 acres of park, recreation, and open space lands by 2005

Objective 3-A.4: Complete five brownfield rehabilitation and redevelopment projects by 2006

Objective 3-A.5: Increase community understanding of ecosystem restoration

Subgoal 3-B: Maintain or improve flood protection in a manner compatible with ecosystem restoration

Objective 3-B.1: Maintain or improve existing levels of flood protection

Subgoal 3-C: Provide sufficient water resources for built and natural systems

Objective 3-C.1: ~~Increase water available to provide~~ restoration endpoint of 478.5 million gallons per day by 2008

Objective 3-C.2: Increase volumes of reuse on a regional basis

Objective 3-C.3: Increase water made available through the SFWMD Alternative Water Supply Development Program

Deleted: Achieve the regional

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The major projects planned to meet these objectives are listed in the Task Force strategy in part one of this Volume (“Coordinating Success”), along with a schedule for their implementation. The projects or activities that were ongoing or completed during FY 2002-04 are described below in the context of progress toward meeting each of the Task Force objectives.

#### Subgoal 3-A: Use and manage land in a manner compatible with ecosystem restoration

##### Integrated Land Use and Water Supply Planning

The Florida DCA and DEP worked on ways to implement the law passed in 2002 that requires the comprehensive plans of counties and cities to be coordinated with the regional water supply plans of the state’s water management districts.

In November 2002 the Florida DCA, DEP, and the five water management districts released a report, *Agency Coordination of Comprehensive Planning and Water Supply Planning in Florida*, outlining an improved interagency coordination process to improve the integration of land use comprehensive planning and water supply planning. The new process includes technical assistance and the review of comprehensive plan amendments and evaluation and appraisal reports (EARs).

#### Objective 3-A.1: Designate an additional 480,000 acres as part of the Florida Greenways and Trails System by 2008<sup>10</sup>

Biennial Report Table 13. July 2004 Status of Projects to Designate an Additional 480,000 Acres as Part of the Florida Greenways and Trails System by 2008

| Project ID | Project End Date | Project Name                                     | Output (additional acres) | Status  |
|------------|------------------|--------------------------------------------------|---------------------------|---------|
| 3100       | 2008             | Florida Greenways and Trails Designation Program | 686,610                   | Ongoing |

Comment [Gs10]: 68610 is from matrix. This output is larger than the objective.

<sup>10</sup> This is a statewide goal; a regional breakout was not available from the reporting agency at the time this goal was established by the Task Force.



|      |      |                                      |  |          |
|------|------|--------------------------------------|--|----------|
| 3102 | 2004 | Lake Okeechobee Scenic Trail         |  | Underway |
| 3103 | TBD  | Florida Keys Overseas Heritage Trail |  |          |

### Florida Greenways and Trails Designation Program

At the end of the reporting period, the Florida Statewide System of Greenways and Trails contained 298,774 acres plus an additional 147 linear miles of greenways and trails land in the sixteen-county area corresponding in whole in the SFWMD.<sup>11</sup> The primary mission of this program is to provide a recreational trail or greenway experience within 15 minutes of every residence and business within the state.

### Lake Okeechobee Scenic Trail (LOST) State Park

Design and land acquisition began in 2003, and construction was well underway at the end of the reporting period. This project, which will create a 115-mile-long trail around Lake Okeechobee, is expected to be completed in 2004. The cost of the project, \$125 million, will be shared equally by the federal and state governments.

The project will make Lake Okeechobee accessible to pedestrians, backpackers, bicyclists, equestrians, sightseers, naturalists, skaters, picnickers, campers, and fishermen, allowing the surrounding communities to appreciate this great natural resource.

### Objective 3-A.2: Increase participation in the voluntary Farm Bill Conservation Programs by 230,000 acres by 2014

At the end of the reporting period, the two projects contributing to objective 3-A.2 was both underway.

**Biennial Report Table 14. July 2004 Status of Projects to Increase Participation in the Voluntary Farm Bill Conservation Programs by 230,000 Acres by 2014**

| Project ID | Project End Date | Project Name                                | Output (annual additional acres) | Status   |
|------------|------------------|---------------------------------------------|----------------------------------|----------|
| 3201       | 2011             | Technical Assistance to Indian Reservations | 107,000                          | Underway |
| 3200       | 2014             | Farm Bill Conservation Programs             | 173,300                          | Underway |

**Comment [Gs11]:** Is this a Farm Bill project? If not, change objective to "ag lands conservation management programs" (a la the matrix)?

**Comment [Gs12]:** Matrix says TBD. 173,300 plus 107,000 = 280,000 (greater than objective)

### Farm Bill Conservation Programs

Since 2002, a total of 173,300 acres in the sixteen-county South Florida region were enrolled in Farm Bill Conservation Programs at an obligated cost of \$50.6 million. The breakout by specific programs was as follows:

**Biennial Report Table 15. Farm Bill Accomplishments, 2002-2004**

| Program | Dollar Amount | Acreage Enrolled |
|---------|---------------|------------------|
|---------|---------------|------------------|

<sup>11</sup> The SFWMD encompasses all of Broward, Collier, Miami-Dade, Glades, Hendry, Lee, Martin, Palm Beach and St. Lucie Counties, as well as portions of Charlotte, Highlands, Okeechobee, Orange, Osceola and Polk Counties.



|                                         |                       |                      |
|-----------------------------------------|-----------------------|----------------------|
| Wetlands Reserve Program                | \$42.4 million        | 26,215 acres         |
| Farm Land Protection Program            | \$ 0.63 million       | 1,385 acres          |
| Environmental Quality Incentive Program | \$8.4 million         | 142,000 acres        |
| Wildlife Habitat Incentives Program     | \$ 0.14 million       | 2,800 acres          |
| Grassland Reserve Program               | \$ 0.13 million       | 900 acres            |
| <b>TOTALS</b>                           | <b>\$51.7 million</b> | <b>173,300 acres</b> |

**Comment [Gs13]:** I made this number up so that the table would total with the text. This is the only number that wasn't mentioned in the text. The Allapattah Ranch would be 15,370 of this total.

**Comment [Gs14]:** The table totals 51.7, not 50.6 as stated in the text.

**Formatted:** Highlight

The Wetlands Reserve Program (WRP) recently enrolled one of the largest WRP projects in the nation, the Allapattah Ranch Project, which is part of the Indian River Lagoon South Program. The Allapattah Ranch Wetland Reserve will restore and preserve approximately 15,370 acres of agriculturally impacted wetlands and associated upland buffer habitat. The project is located within the eastern portion of the Allapattah Ranch, a 22,700 acre beef cattle ranch in northwestern Martin County,

### Objective 3-A.3: Acquire an additional 2,500 acres of park, recreation, and open space lands by 2005<sup>12</sup>

At the end of the reporting period, the three projects contributing to objective 3-A.3 were all underway.

**Biennial Report Table 16. July 2004 Status of Projects to Acquire an Additional 2,500 Acres of Park, Recreation, and Open Space Lands by 2005**

| Project ID | Project End Date | Project Name                            | Output (acres/miles) | Status   |
|------------|------------------|-----------------------------------------|----------------------|----------|
| 3300       | 2005             | Florida Communities Trust Grant Program | 1,000 acres          | Underway |

**Comment [Gs15]:** 1,000 is from matrix

### Acquisition of Parklands

During the reporting period, the Land Acquisition Task Team collected and synthesized, for the first time, data from the sixteen counties within the boundaries of the SFWMD. Counties with a conservation land acquisition program provided a summary of their programs, making possible an initial inventory of county held conservation lands. To date, 44,040 acres have been acquired by the counties. The Land Acquisition Task Team can now begin to track progress towards meeting this objective and will report on that progress in the next biennial report.

### CERP Master Recreation Plan (MRP)

The draft PMP for the CERP MRP was released for public comment on February 23, 2004. When completed the MRP will guide a systemwide approach to identifying, evaluating, and addressing the recreation aspects of CERP project implementation. This will include not only existing recreation use within the South Florida Ecosystem, but also potential new recreation, public use, and public educational opportunities. The MRP will coordinate CERP recreation with other known public and private recreation plans.

<sup>12</sup> This is a statewide goal: a regional breakout was not available from the reporting agency at the time this goal was established by the Task Force.

Objective 3-A.4: Complete five brownfield rehabilitation and redevelopment projects by 2006

At the end of the reporting period, eighteen brownfield rehabilitation and redevelopment projects were underway.

Biennial Report Table 17. July 2004 Status of Projects Contributing to the Completion of Five Brownfield Rehabilitation and Redevelopment Projects by 2006

| Project ID | Project End point | Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Output                                                                                    | Status                                                                                                                |
|------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|            | 2006              | Konover Site - Fort Lauderdale<br>Little Haiti Park Site - Miami<br>Liberia Area - Hollywood<br>Gravity Entertainment Site – Lauderdale Lakes<br>Former Palm Beach Lakes Golf Course – West Palm Beach<br>Liberty City Area - Miami<br>The Wynwood Project - Miami<br>Wagner Square Project - Miami<br>Pompano Beach Multi-Purpose Project<br>Potamkin Properties – Miami Beach<br>Biscayne Commons Site – North Miami Beach<br>Beacon Lakes – Miami Dade County<br>Mid-Town Miami<br>Stiegel Gas & Oil Corp – Miami<br>Former Gipson's Service Station – Miami<br>Former JG Shamrock/Supreme Service Station- Miami<br>McArthur Dairy Site – Lauderdale<br>Dania Motocross Brownfield Area – Dania Beach | Completion of Rehabilitation and/or redevelopment of current projects underway each year. | All of these project are at varying states moving toward final completion of both cleanup if needed and redevelopment |

The Eastward Ho! Brownfields Partnership, which includes Miami-Dade, Broward, and Palm Beach Counties, is a good example of how local, regional, state, and federal agencies are working with private nonprofit and community organizations to facilitate the redevelopment of brownfields. More than \$41 million had been committed by state, regional, local, and private entities for pilot projects through September 2003. In addition, approximately \$29.2 million in federal funding had been committed to assist projects in the partnership area.

During the reporting period one loan was closed under the Eastward Ho! Brownfields Revolving Loan Fund Program. The brownfields program in southwest Florida had one project underway in Fort Myers.

Objective 3-A.5: Increase community understanding of ecosystem restoration

Biennial Report Table 18. July 2004 Status of Projects to Increase Community Understanding of Ecosystem Restoration

| Project ID | Project End Date | Project Name                                                                                                                                                                                                                                                                                                      | Output             | Status       |
|------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------|
| 3500       | TBD              | USDA NRCS Earth Team Project, in cooperation and coordination with the South Florida Ecosystem Restoration Inc. and South Florida Ecosystem Restoration Advisory Committee, will train 1000 volunteers to educate citizens about and how to participate in ecosystem restoration and conserving natural resources | Trained volunteers | 10% complete |

## **CERP Outreach and Regional Coordination**

### **Public Involvement and Information**

The USACE and SFWMD made considerable progress during the reporting period in raising the awareness of South Florida's public-at-large and minority communities about the CERP. Innovative products, unique delivery methods, and public involvement all helped ensure that the CERP is better understood and that the public has opportunities to participate in decision making. Highlights from the reporting period are summarized below.

**General Public Awareness.** The new logo--The Journey to Restore America's Everglades -- was incorporated into many outreach materials to emphasize that each person can make a difference everyday to protect the natural environment. In 2004, an interactive kiosk was developed to reach new audiences, which will be placed in shopping malls, libraries, airports, and other non-traditional venues.

**Minority Community Outreach.** Databases, newspaper inserts, electronic newsletters, translation of materials, radio programs, and specialty items including fans and calendars were developed to communicate the goals of CERP in culturally-sensitive ways. Meetings were held with community leaders and focus groups.

**Environmental Education.** Curricula and teachers' guides were developed and distributed in K-12 schools throughout the sixteen-county South Florida region, often in partnership with the Newspapers in Education (NIE) program. In 2004, a new animated CERP character, Wayne Drop, was introduced to bring CERP to life for elementary students.

**Small Business Outreach.** Staff proactively engaged and assisted small businesses through business forums, workshops, and training sessions; development of web sites; distribution of printed materials; and other means.

**Project-Level Involvement.** Stakeholder meetings, public workshops, and public meetings were held to involve local residents in the development of CERP projects.

## **The Museum of Discovery and Science and the Task Force Collaboration Committee**

The Museum of Discovery and Science continued to serve as the interpretive site for the Everglades Restoration Project by educating South Florida's residents and visitors about the quality, quantity, timing, and distribution of water in the Everglades. During the reporting period, the Living in the Everglades exhibit was visited by over 800,000 visitors. Museum programming focused on a unique combination of engaging hands-on demonstrations, labs, and live animal encounters. These presentations were delivered at the Museum and in the community. By visiting community centers, churches, schools, fairs, and festivals the Museum staff served 6,349 individuals in six underserved communities in South Florida. Additional Everglades programming was delivered during the Museum's camp-ins, day camps, summer camps, and via school, public, and BECON television programs. The Museum contracted with the Task Force (Office of the Executive Director) to create and deliver 40 new outreach programs to underserved communities in Broward County. It received grants from the Department of Planning and Environmental Protection to develop and implement educational programming, from the Division of Forestry for backyard programming, and from the SFWMD to design new graphic panels for the Museum's Ecoscapes exhibit.

## **Everglades Radio Network (ERN)**

The ERN was launched on February 23, 2004. The ERN is a low-power, 24/7 FM transmission along Alligator Alley that will inform travelers about the Everglades Ecosystem and the progress towards its restoration.

#### Objective 3-B.1: Maintain or improve existing levels of flood protection

At the end of the reporting period, the two projects contributing to objective 3-B.1 were both underway.

**Biennial Report Table 19. July 2004 Status of Projects to Maintain or Improve Existing Levels of Flood Protection**

| Project ID | Project End Date | Project Name                       | Output                                 | Status   |
|------------|------------------|------------------------------------|----------------------------------------|----------|
| 3600       | 2004             | C-4 Basin Flood Mitigation Project | Flood protection at 1 in 10-year level | Underway |
| 1300       | 2005             | C- 111 Canal project               | Flood protection at 1 in 10-year level | Underway |

#### C-4 Basin Flood Mitigation Project

The project was under construction during the reporting period and is scheduled to be completed in December 2004. This to a more-than-10-year service level. The C-4 Emergency Detention Basin Phase 1 is completed and operational. The C-4 Emergency Detention Phase 2 is under construction. The Earthwork portion of the project (perimeter levee system) was completed in June 2004, and the Inflow Pump Station (G-422) is scheduled to be completed by October 2004. Phase 3 involves the selective dredging of the C-4 to improve conveyance capacity at specific locations including 137<sup>th</sup> Avenue and the Turnpike, west of the Palmetto Expressway and downstream of Structure S-25-B. This phase of the project is currently under planning and design.

Objective 3-C.1: ~~Increase the water available to reach restoration endpoint of 478.5 million gallons per day by 2008~~

Deleted: Achieve

Deleted: regional

Deleted: supply

At the end of reporting period the four projects contributing to objective 3-C.1 were all underway.

**Biennial Report Table 20. July 2004 Status of Projects to Achieve the Regional Water Supply Target of 478.5 Million Gallons per Day by 2008**

| Project ID | Project End Date | Project Name                       | Output (mgd) | Status   |
|------------|------------------|------------------------------------|--------------|----------|
| 3701       | 2008             | Lower East Coast Water Supply Plan | 154.7        | Underway |
| 3702       | 2008             | Lower West Coast Water Supply Plan | 189.6        | Underway |
| 3703       | 2008             | Upper East Coast Water Supply Plan | 63           | Underway |
| 3700       | 2008             | Kissimmee Basin Water Supply Plan  | 71.2         | Underway |

#### Regional Water Supply Plan Estimated Water Made Available

The first round of updates to the regional water supply plans was started in 2003 and will be concluded for all the regions by December 2005.

The water supply achievements in 2004 are compared to the 2008 restoration endpoints in Biennial Report Error! Reference source not found..

**Biennial Report Table 21. Water Supply Achievements, 2004**

| Region           | Estimated Achieved in 2004 | R (MGD)<br>To achieve by 2006 |
|------------------|----------------------------|-------------------------------|
| Lower East Coast | 33.5                       | 154.7                         |

|                  |       |       |
|------------------|-------|-------|
| Lower West Coast | 69.3  | 189.6 |
| Upper East Coast | 21.3  | 63.0  |
| Kissimmee Basin  | 7.4   | 71.2  |
| Total            | 131.5 | 478.5 |

#### Objective 3-C.2: Increase the volume of water reuse on a regional basis

At the end of the reporting period, one of the projects contributing to objective 3-C.2 was completed, one had been dropped, and one was underway.

Biennial Report Table 22. July 2004 Status of Projects to Increase the Volume of Water Reuse on a Regional Basis

| Project ID | Project End Date | Project Name                                                                      | Output (mgd) | Status                                             |
|------------|------------------|-----------------------------------------------------------------------------------|--------------|----------------------------------------------------|
| 3802       | 2013             | Wastewater Reuse Technology Pilot Project                                         |              | Underway                                           |
| 3800       | 2023             | C&SF: CERP –South Miami-Dade County Reuse                                         | 131          |                                                    |
| 3801       | 2023             | C&SF:CERP – West Miami-Dade County Reuse                                          | 100          |                                                    |
| 3805       | 2004             | Orlando Kissimmee Area Regional Reclaimed Water Optimization Plan                 | Study        | Project dropped no local support                   |
| 3803       | 2008             | Lower West Coast Regional Irrigation Distribution System Master Plan Study        | Study        |                                                    |
| 3804       | 2004             | Northern Palm Beach County and Southern Martin County Reclaimed Water Master Plan | Study        | Completed – not economically feasible at this time |

#### Wastewater Reuse Technology Pilot

The PMP was approved in November 2003. The site-selection process narrowed the number of potential sites to receive discharge from eight to four.

The scope of this project was changed to include two main efforts. The first is the preparation of a Technology Report to evaluate various treatment alternatives, the performance of these alternatives in obtaining the desired water quality to be discharged to a pristine environment, and the capital and operating costs associated with these technologies for a full-scale implementation. The second is the monitoring and evaluation of the presence of *emergent pollutants of concern* in the existing wastewater treatment facility in south Miami-Dade County.

#### Northern Palm Beach County and Southern Martin County Reclaimed Water Master Plan

In FY 2002 the SFWMD conducted a master plan study of the feasibility of construction and operation of a reclaimed water system for northern Palm Beach County. This study was conducted as part of the *Lower East Coast Regional Water Supply Plan*. The nine-month study included the quantification of existing and future (2020) irrigation demands in the study area, the availability of local sources, and the unmet needs. The study evaluated different treatment and transmission options, institutional frameworks, and funding options. Local entities contributed \$55,000 towards this project. The study was completed and it was determined that the project was not economically feasible.

#### Objective 3-C.3: Increase water made available through the SFWMD alternative water supply program

Biennial Report Table 23. July 2004 Status of Projects to Increase Water Made Available through the SFWMD Alternative Water Supply Program

| Project ID | Project End Date | Project Name                                      | Output  | Status   |
|------------|------------------|---------------------------------------------------|---------|----------|
| 3900       | Ongoing          | Alternative Water Supply Grant Program - annually | 200 mgd | Underway |

The Florida DEP continued to work with the water management districts, public water suppliers, and other stakeholders to implement the recommendations of the 2002 State Water Conservation Initiative Report. The FDEP, the districts, and representatives of public water supply utilities signed a Joint Statement of Commitment for the Development and Implementation of a Statewide Comprehensive Water Conservation Program for Public Water Supply. The legislature affirmed this effort in the 2004 legislative session with the passage of HB 293. Among other things, the bill directs the DEP to develop such a program and to submit a progress report to the legislature by December 1, 2004.

**Comment [Gs16]:** Does this discussion fit here? (Moved from the strategy.)

The annual targets and the actual alternative water supplies for each region are listed in Biennial Report Table 24. The 2004 achievements were lower than the annual water targets by 35.95 million gallons per day (mgd). The most significant regional difference occurred in the Kissimmee Basin.

Biennial Report Table 24. SFWMD Alternative Water Supply Program Achievements, 2004

| Region           | 2004 Targets (mgd) | 2004 Achievements (mgd) |
|------------------|--------------------|-------------------------|
| Lower East Coast | 41.2               | 55.11                   |
| Lower West Coast | 68.7               | 30.59                   |
| Upper East Coast | 4.40               | 8.33                    |
| Kissimmee Basin  | 23.38              | 7.70                    |
| TOTALS           | 137.68             | 101.73                  |

The differences between the targets and achievements occurred for two main reasons. With respect to the total differences, the 2004 targets were made in April 2003, when 38 of the 42 applications were deemed eligible by SFWMD staff. The Alternative Water Supply Funding Selection Committee later recommended that only 34 projects receive funding. In fiscal year 2004 the SFWMD contributed \$4.5 million to 34 water supply projects as part of the Alternative Water Supply Funding Program. If all 38 projects had been funded, the total water made available would have been 120.59 instead of 101.73. The difference between the four projects in terms of water made available was 18.86 mgd.

Projects located in the Kissimmee Basin were not eligible to apply for a grant until April 2003. Up to that time, proposed alternative water supply projects were limited to areas within a designated Water Resource Caution Area. However, in 2002, legislation was passed to allow for proposed projects in all areas. The Kissimmee Basin Planning Area was not eligible to apply for a grant until the FY 2004. AWS Grant Application was made available in April 2003. It was assumed that there would be a larger number of applicants from the Kissimmee Basin; however, there were only three. These three projects, when completed, are expected to make 7.70 mgd available.

## MEASURING PROGRESS TOWARD RESTORATION

The appropriate Task Force agencies are tracking progress toward the Restoration of the South Florida Ecosystem by developing and monitoring specific indicators of ecosystem health. In 2000-2002 the Task Force reported on a preliminary set of indicators that are now included in Appendix C. Over the past two reporting periods a great deal of modeling and analysis has created new information that is being used to revise the initial set of indicators and to identify more accurate restoration endpoints that will aide in measuring restoration success. The ongoing discussion about indicators includes (1) how best to use them, (2) which ecological attributes are most appropriate and useful as indicators (especially the degree to which their future status may be predicted by reliable models), and (3) how to analyze and report the data in the most effective way for restoration management purposes."

In compliance with the Programmatic Regulations discussed on page 63 of this biennial report, RECOVER is vetting indicators to be used to assess restoration progress and to adaptively manage the CERP portion of the restoration effort over time. Additional scientific and technical information about areas not covered by the CERP is being developed and refined by federal, state, and local agencies, including the FWS, which has developed and is implementing the *Multi-Species Recovery Plan*. The Task Force will also report on some of the indicators identified through these efforts. Thus, although there has been and likely will continue to be a strong correlation between the indicators tracked in the reports of the Task Force and the reports of RECOVER, they will not necessarily be identical.

As noted in the Strategic Plan (page XX), the Task Force has charged the SCG with recommending a comprehensive set of systemwide indicators and restoration endpoints that the Task Force will report on in the future. The SCG will first design an open process that will provide ample opportunity for peer review and public input in the selection of a comprehensive set of systemwide indicators.

Revised indicators are prerequisite to a series of tasks to accurately predict progress towards restoration. These tasks include: Identifying what will be tracked (indicators), the baseline for those indicators, what the indicator will look like when restoration is successful (restoration endpoints), and a system-wide monitoring plan. The baseline will define the condition of the indicator prior to restoration efforts, as a basis for determining whether changes that are measured are due to the natural variability of the indicator or due to real change that may linked to restoration or other changes in the environment. Finally a process to synthesize and report on interim progress on a periodic (annual/biennial) basis that includes a period of public input and peer review.

## **APPENDICES**

**A: Overview of Programs and Costs**

**B: Integrated Financial Plan Summary Table**

**C: Linkages between Strategic Work Efforts and Ecosystem Restoration**

**D: Indicators and Linkages from 2002 Document**

**E: Water Resources Development Act of 2000, Title VI Comprehensive Everglades Restoration**

**F: South Florida Ecosystem Restoration Task Force Charter**

**G: Integrated Financial Plan – Detailed Data Project Sheets – See Volume 2**



## APPENDIX A: OVERVIEW OF MAJOR PROGRAMS AND COSTS

Staff is currently reviewing this section

The Conference Committee Report language accompanying the Department of the Interior and Related Agencies Appropriations Act for Fiscal Year 2000, Public Law 106-113, requested that the DOI submit information, to be updated biennially, on the total cost of the effort to restore the South Florida Ecosystem. In relevant part, the report language **states**:

"It would be useful to have a complete estimate of the total costs to restore the South Florida Ecosystem. The House and Senate Committees on Appropriations believe that this new estimate will exceed the \$7,800,000,000 estimate that has been used over the last five years. This recalculated estimate should include all three strategic goals of this initiative, namely, (1) Getting the Water Right, (2) Restoring and Enhancing the Natural Habitat, and (3) Transforming the Built Environment. The Congress and the American people are committed to this project. Over \$1,300,000,000 has been appropriated to date, however, and the public deserves to know how much this project will truly cost. This information should be submitted to the House and Senate Committees on appropriations no later than February 1, 2000 and should be updated biennially."

**Comment [LF17]:** Staff is reviewing the overview of programs and costs at this time. This 2002 text from the 2002 Document. is here as a placeholder.

The best estimate for the total cost to restore the South Florida Ecosystem continues to be \$14.8 billion, as reported by the DOI in a letter to Congress dated March 8, 2000. Of the total restoration cost \$7.8 billion represents the cost of implementing the CERP, which will be shared equally by the federal government and nonfederal sponsors. The CERP outlines sixty-eight components that will take more than thirty years to construct. The CERP, which was approved by Congress in WRDA 2000, is integral to achieving two of the three strategic goals of restoration: get the water right (restore more natural flows to the ecosystem while guaranteeing regional water supplies and flood control), and restore, preserve, and protect natural habitats and species. Because ongoing Congressional authorization is required for the proposed projects included in the CERP, and because individual projects must undergo additional site-specific studies and analyses, the overall cost to implement this significant component of the restoration effort could be lower or higher, depending upon future analyses and site-specific studies.

The CERP builds on other plans and projects that were authorized by Congress and the Florida Legislature prior to and independent of the CERP. These include the Everglades Construction Project; the C-111 Project; the Modified Water Deliveries to Everglades National Park Project; the Kissimmee River Restoration Project; a number of smaller "Critical Projects" authorized by WRDA 1996; the MSRP; state water quality plans; the Florida Forever programs, which include a variety of conservation, recreation, and water resource land acquisition programs; and federal land acquisitions for national parks, preserves, and wildlife refuges. Taken together these projects represent an additional \$7 billion investment. The costs for these measures have been included in the total cost of ecosystem restoration because they actively promote the overall strategic goals and establish the baseline conditions for the CERP. Appendix B - **Error! Reference source not found.** is a tracking matrix which identifies individual projects, responsible agencies, restoration endpoints, and costs.

The projections and project schedules in this strategy span multiple decades and depend on certain assumptions about state and federal budget requests and funding levels, optimized construction schedules, willing sellers, and other contingencies. These assumptions are likely to change as the projects progress, and appropriate revisions to the strategy will be necessary. Therefore, this strategy does not represent a commitment by the federal, state, or local governments or the tribes to seek appropriations for specific projects and activities at the funding levels laid out in this strategy.

State and Federal agencies have already acquired 4.9 million acres of land for Ecosystem Restoration purposes. As of June 2004, the state had acquired 3.6 million acres of habitat conservation land in South Florida at a cost of over \$2 billion.

## APPENDIX B: INTEGRATED FINANCIAL PLAN SUMMARY TABLE

This appendix is provided as a summary of the Integrated Financial Plan that is available in greater detail in a separate Volume of this document (Volume 2). This summary provides additional information about the restoration projects that contribute to the accomplishment of the vision, strategic goals, subgoals, and objectives described in the *Strategy for Restoration of the South Florida Ecosystem* and progress reported on in the *Biennial Report*.

Individual agencies have identified the projects to be included and have provided the information about these projects. The Task Force has not independently evaluated or endorsed any project.

### HOW TO USE THE INTEGRATED FINANCIAL PLAN SUMMARY TABLE

**Error! Reference source not found.** provides a great deal of useful information for those interested in project details at a glance and how the projects link to the overall strategic goals, subgoals and objectives of the Task Force. This same table is repeated in Volume 2, where more detailed information on each of the projects is reported.

Each column of the table has a specific purpose to assist in finding information quickly and aggregating different information components:

Column 1 identifies the goal and subgoal the project is designed to achieve or partially achieve

Column 2 assigns a unique project number linked to the Task Force goals, subgoals, and objectives. The first digit is a goal number (1, 2, or 3). The second digit is the subgoal/objective number. For the purpose of assigning project numbers, the objectives under each goal have been numbered consecutively regardless of their subgoal. For example, project 1104 would be a project that supports objective 1-A.1, while project 1504 would be a project that supports objective 1-B.1 (the fifth objective under goal 1). The third and fourth digits reflect the order of listing of the projects under each subgoal/objective. For example, project 1104 would be the 4th project on the list for that objective.

Column 3 is the project name. The staff strives to use the same project name used by all agencies, although at times this is quite challenging. Some of the project names changed from year to year as projects are grouped together or split apart in the CERP adaptive management process. For example the Lake Istokpoga Project, which was a separate project in 2002, has since been included in the Lake Okeechobee Watershed Project. These types of actions affect the restoration endpoints and total outputs measured by some of the objectives, and as a result some of the restoration endpoints s have changed.

Column 4 identifies the lead agency

Column 5 and 6 identify the reported start and end dates

Column 7 identifies the current estimated financial requirements

Column 8 identifies the financial resources appropriated to date

Column 9 identifies the measurable outputs (e.g., acre-feet of storage, miles modified, etc.) that collectively add up to the restoration endpoint identified for achieving the objectives of each subgoal  
Columns 10 and 11 identify the primary and secondary objectives that the project outputs support. The staff identified the primary and secondary objectives based on input from the reporting agency. Some projects provide outputs supporting more than one objective. Thus, they are listed in more than one section with different outputs. For example, the Lake Okeechobee

Watershed Project (project 1104) provides acres of stormwater treatment for Objective 1.B.1 and acre-feet of storage for Objective 1.A.1. Such projects are numbered according to the primary objective identified for the project, and the same number is maintained when the project is repeated to identify the secondary benefit.

Column 12 identifies the page number in Volume 2 where the detailed project sheet can be located.

Detailed information data sheets, which are included in Volume 2, provide further information for each of these projects, including:

Project name  
Unique Task Force project identification number  
Lead agency  
Authority  
Goal(s) addressed  
Measurable output(s)  
Cost  
Project schedule  
Project synopsis  
Detailed project budget information  
Hyperlink or point of contact for more detailed project

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## **APPENDIX C: TASK FORCE APPROVED 2002 INDICATORS OF SUCCESS & LINKAGES BETWEEN WORK EFFORTS & ECOSYSTEM RESTORATION**

THESE SECTIONS FROM THE 2002 DOCUMENT ARE BEING REVISED, BUT MAINTAINED AS AN APPENDIX FOR REFERENCE

### ***Indicators of Success from 2002 “Coordinating and Tracking Success”***

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The appropriate Task Force agencies are tracking success toward the restoration of the South Florida Ecosystem, by developing and monitoring approximately 200 indicators of ecosystem health. These indicators, which range from the number of acres of periphyton in Everglades marshes to the frequency of water supply restrictions in urban and agricultural areas, represent the myriad physical, biological, and human elements that are all interrelated as parts of the ecosystem and are all important to ecosystem health. Many of these indicators of ecosystem health represent end results that may take up to fifty years to realize. Interim targets, which focus on earlier indications of successional change, will allow assessment of incremental progress.

The following indicators are a small representative subset of that much larger set of measures. They have been selected for inclusion in this iteration of the Task Force’s strategy and in the current biennial report to Congress, the Florida Legislature, and the councils of the Miccosukee and Seminole Tribes because they are currently believed to be among the most indicative of natural system functioning throughout the region as a whole and among the most understandable and meaningful to the American people and the residents of South Florida. These preliminary indicators may be refined as more information is available. The selected indicators and their long-term targets are presented in this section of the strategy, and the progress made over the past two-year period is described in the biennial report (which begins on page 61 of this Volume).

Responding to Congress’s direction that the restoration effort be guided by, and continuously adapted to, the best science available, a multiagency Restoration Coordination and Verification Team (RECOVER) has been established to support the implementation of the CERP with scientific and technical information. RECOVER is developing recommendations for the majority of the performance measures that will be used to assess restoration progress and to adaptively manage the restoration effort over time. Additional scientific and technical information about areas not covered by the CERP is being developed and refined by other federal, state, and local agencies.

With the exception of the indicator for threatened and endangered species, which came from the U.S. Fish and Wildlife Service (FWS), the following indicators are from the 1999 Baseline Report for the Comprehensive Everglades Restoration Plan, prepared by RECOVER. This information may be modified as new data becomes available. RECOVER, for example, will update the information in the Baseline Report but this will not take place until after publication of this strategy and biennial report. This updated information will be incorporated into future Task Force reports.

#### **Indicators of Total Ecosystem Health**

##### **Threatened and Endangered Species**

Significance and background. The FWS *Multi-Species Recovery Plan* (MSRP) identified more than four hundred species of plants and animals that are listed as threatened or endangered by the State of Florida, the FWS, or the National Marine Fisheries Service (NMFS). Of those, sixty-nine species are federally listed in this region. The MSRP contains information on the biology, ecology, distribution, status, trends, management, and recovery actions needed to recover the sixty-eight federally listed species under FWS authority (the sixty-ninth species is under NMFS authority). The plan also identifies the biological

composition, status, trends, and management and restoration needs of the twenty-three major ecological communities that compose the South Florida Ecosystem. An ecosystem-based approach to species recovery will optimize benefits to the greatest number of imperiled species and other species of concern. It will also ensure that management and planning efforts reflect the best known step-wise processes for overall restoration of the communities. To achieve the recovery and restoration actions identified in the MSRP, the FWS is developing an ecosystemwide implementation strategy with support from a multi-agency/stakeholder team.

*Target.* Improved status for fourteen federally listed threatened or endangered species, and no declines in status for those additional species listed by the state, by 2020

### **Nesting Wading Birds**

*Significance and background.* Large numbers of wading birds were a striking feature of the predrainage wetlands of South Florida. Single nesting colonies could contain as many as 50,000 to 100,000 pairs of birds. Although most of these colonies were decimated by plume hunters late in the nineteenth century, protective legislation and good habitat conditions during the early twentieth century allowed most of the nesting species to fully recover. The huge traditional rookery that was located along the extreme upper reaches of Shark River was estimated in 1934 to have been a mile long and several hundred feet wide. These "bird cities," which contained an estimated 75-95 percent of all wading birds nesting in the predrainage Everglades, had largely disappeared from the southern Everglades wetlands by the 1960s.

Substantial reductions in the total area of wetlands, changes in the location, timing, and Volumes of flows, and the creation of unnatural water impoundments in the Everglades have been the factors that have combined to disrupt traditional nesting patterns, leading to a 90 percent decline in the total number of birds. Colonies that have been forced to relocate to the Everglades water conservation areas have been smaller and less successful than were the colonies in the traditional estuarine rookeries such as Shark River. As a requirement for recovery, wading birds may need to reoccupy the now largely abandoned estuarine colony sites in southern and western Everglades National Park. In addition, wood storks must be able to return to more natural timing patterns for nesting (between November and January) than current water management practices allow.

*Target.* Recover, at a minimum, an annual average of 10,000 nesting pairs of great egrets, 15,000 pairs of snowy egrets and tricolored herons combined, 25,000 pairs of white ibis, and 5,000 pairs of wood storks.

### **Urban and Agricultural Water Supply**

*Significance and background.* A regional water supply system can be evaluated on how well it meets reasonable and beneficial urban and agricultural demands even in drought years. In 1997 Florida established a water supply planning goal to provide water to all existing users during droughts up to the level of severity of a one-in-ten-year frequency of occurrence. This goal has been interpreted to mean at least a 90 percent probability that during any given year all of the needs of reasonable, beneficial water uses will be met while also not causing harm to the water resources and related natural environment.

*Target.* Meet urban and agricultural water supply needs in all years up to and including those years with droughts with a one-in-ten-year frequency of occurrence

## Indicators of Lake Okeechobee Health

### Submerged Aquatic Vegetation

*Significance and background.* In shallow eutrophic lakes, submerged aquatic vegetation (plants that grow under water) plays a critical role in providing habitat for fish, wading birds, and other wildlife. When submerged aquatic vegetation is dense and widespread, water generally is clear and nutrient concentrations are low, reflecting active uptake of nutrients by the plants. Shoreline areas of Lake Okeechobee supported more of this type of vegetation in the past; however, unnaturally high lake levels are believed to have precipitated its decline. The extent to which fish and birds will recover following a sustained recovery of these plants remains to be seen and is a major focus of ongoing research.

*Target.* Sustain at least 40,000 acres of total submerged vegetation, including benthic macro-algae, around the shoreline of Lake Okeechobee on an ongoing basis, and of that total have at least 20,000 acres of rooted plants, in particular, eelgrass and peppergrass

## Indicators of Estuary Health

### Oyster Beds in the St. Lucie Estuary

*Significance and background.* Oysters are ecologically important as filter-feeding primary consumers, as prey for numerous higher consumers, and as habitat formers. The decline in oyster populations has contributed to ecologically damaging algal blooms in the estuary. The inability of the water body to assimilate the overabundance of algae produced by large Volumes of nutrient-laden discharge is compounded by the low numbers of healthy oysters and other bivalves, which would otherwise help filter the water.

A healthy oyster population in the St. Lucie Estuary is only possible if a more stable salinity regime can be established by restoring a more natural quantity and timing of freshwater flows into the estuary. The target is based on areas with suitable substrate that will potentially recover appropriate salinity ranges as a result of CERP project implementation.

*Target.* Increase the extent of healthy oyster beds in the St. Lucie Estuary to approximately 900 acres.

### Roseate Spoonbills

*Significance and background.* Although the number of nesting spoonbills in extreme southern Florida increased from 15 pairs in the late 1930s to a peak of 1,254 pairs in 1979, numbers in the 1990s have fluctuated between 500 and 750 pairs. The considerable reduction since the late 1970s in the number of nesting birds in once-large nesting colonies in northeastern Florida Bay has been due to deterioration in important feeding grounds in mainland estuaries between lower Taylor Slough and Turkey Point. Recovery of nesting in northeastern Florida Bay may depend on more natural flow Volumes and patterns of freshwater into adjacent estuaries. Recovery of long-abandoned spoonbill nesting colonies along the southwestern gulf coast is more problematic, but it may also depend, at least in part, on freshwater flows necessary to recover historical salinity patterns.

*Target.* Two measurable targets have been set for roseate spoonbills: (1) Recover and stabilize the Florida Bay nesting population to at least 1,000 pairs annually distributed throughout the bay, including 250 pairs nesting in northeast Florida Bay (a doubling from the current 125 pairs). (2) Recover some level of nesting by spoonbills in the coastal zone of the southwestern gulf coast between Lostman's River and the Caloosahatchee River estuary.

## Indicators of the Health of the Everglades Ridge and Slough

### Tree Islands

*Significance and background.* Tree islands, which occur throughout the Everglades marshes, are small, isolated high spots, which historically have provided essential habitat for a wide variety of plants and animals. The islands serve as places of refuge for animals during periods of high water. They are sources of food and cover for wildlife and provide nesting sites for wading birds and freshwater turtles. Tree islands are highly important to the culture of both the Miccosukee and the Seminole Tribes. Hunters, fishermen, and recreational visitors to the Everglades consider tree islands to be symbolic of the health of the entire ecosystem.

Unnaturally deep water has had a devastating effect on the tree islands. In the water conservation areas, only four of the fifty-eight tree islands present in WCA-2A in 1940 were still present in 1995. Approximately half the tree islands have been lost in WCA- 3A and -3B. Exotics are contributing to the devastation of tree islands. By 1997 Old World climbing fern had infested 21,000 acres of tree islands in WCA-1. While the majority of this infestation has been at the north end, the species has continued to spread through all of WCA-1 and has recently been identified in WCA-2 and WCA-3. It is not known if the tree islands can be restored. Further research is needed to determine the feasibility of rebuilding lost tree islands.

*Target.* No further degradation of tree islands, and recovery of as much as possible of the number and acreage of the islands present in WCA-2 and WCA-3 in 1940 (Additional research will be needed to identify the potential for recovering the acreage and number of islands present in 1940.)

## Indicators of Florida Bay Health

### Seagrass Beds

*Significance and background.* The seagrass beds of Florida Bay are the keystone of the entire bay ecosystem. They provide critical food and habitat for shrimp, fish, and other estuarine organisms. The grass beds also stabilize the bay's sediments, thus promoting clear water and helping to minimize ecologically damaging algal blooms.

The first quantitative survey of Florida Bay seagrasses in 1984 revealed that the beds were already adversely impacted by the diversion of freshwater flows from the mainland Everglades and by other human activities of the twentieth century. A large-scale die-off of seagrass started in 1987. The judgment of the overall quality of seagrass beds in Florida Bay is based on the diversity of species of grasses in the beds.

*Target.* Achieve coverage of 65 -70 percent of Florida Bay with high-quality seagrass beds distributed throughout the bay.

### Commercial Pink Shrimp Harvests

*Significance and background.* Pink shrimp are important both economically and ecologically in South Florida. Until the decline of the Tortugas fishery, the pink shrimp was Florida's number one fishery species in terms of value, and the bulk of the landings came from the Tortugas. In addition, pink shrimp are a major link in the food chains of many fish, such as grey snapper and other game fish species of coastal South Florida. The growth and survival of young pink shrimp is influenced by salinity. Adult shrimp abundance, as reflected in catch rates per unit of effort, is influenced by the quantity and timing of freshwater inflows to the southwest gulf coast and Florida Bay nursery grounds. Restoration of flows

more similar to rainfall-driven flows, which can be predicted by the Natural System Model, should benefit the Tortugas pink shrimp fishery.

*Target.* A long-term average rate of commercial harvest of pink shrimp on the Dry Tortugas fishing grounds that equals or exceeds the 600 pounds per vessel-day that occurred during the seasons 1961-62 to 1982-83, and an amount of large shrimp (defined as fewer than sixty-eight shrimp per pound) in the long-term average catch exceeding 500 pounds per vessel

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## LINKAGES BETWEEN WORK EFFORTS AND ECOSYSTEM RESTORATION FROM 2002 "COORDINATING AND TRACKING SUCCESS"

Table C-1. Linkages between Work Efforts and Ecosystem Restoration

| Table C-1. Linkages between Work Efforts and Ecosystem Restoration |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 |                                                                                                                        |           |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------|
| MEASURES OF ECOSYSTEM HEALTH                                       |                                                                                                                                                                                                                   | LINK AGES                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                 | MEASURES OF WORK EFFORTS                                                                                               |           |
| Indicator                                                          | Measurable Output                                                                                                                                                                                                 | Stressor                                                                                                                                                                                                                                                                                            | Restoration Action                                                                                                                                                                                                                                                                                              | Examples of Projects Related To Eliminating/Mitigating Stressor                                                        | Objective |
| Total System: Threatened and endangered species                    | Improved status for fourteen federally listed T&E species, and no declines in status for those additional species listed by the state, by 2020.                                                                   | Loss, degradation, and fragmentation of habitat                                                                                                                                                                                                                                                     | Acquisition and restoration of critical habitat lands, including linkage corridors, along with restoration of more natural hydrologic functions in wetlands and maintenance control of invasive exotic species, is expected to halt declines in species status and lead to the recovery of healthy populations. | 2004: Hobe Sound National Wildlife Refuge                                                                              | 2-A.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2005: Florida Keys National Wildlife Complex                                                                           | 2-A.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2005: Big Cypress National Preserve Addition                                                                           | 2-A.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2010: Kissimmee River Restoration Project                                                                              | 2-A.3     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2020: Achieve Maintenance Control Status for Brazilian Pepper, Melaleuca, Australian Pine, and Old World Climbing Fern | 2-B.2     |
| Total System: Nesting wading birds                                 | Target: Recover, at a minimum, an annual average of 10,000 nesting pairs of great egrets, 15,000 pairs of snowy egrets and tricolored herons combined, 25,000 pairs of white ibis and 5,000 pairs of wood storks. | Disruptions to traditional nesting patterns caused by reduced water flows into the estuaries, which were traditionally the richest rookery sites, substantial reductions in the total area of wetlands throughout the ecosystem, and the creation of unnatural water impoundments in the Everglades | Restoring the location, timing, and volumes of water flows, particularly the flows to the estuaries, is expected to result in more traditional nesting patterns, improved reproductive success, and recovered larger populations of nesting wading birds.                                                       | 2008: Modified Waters Delivery Project                                                                                 | 1-A.3     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2008: Canal 111                                                                                                        | 1-A.3     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2009: Everglades Agricultural Area Storage Reservoir, Phase 1                                                          | 1-A.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2014: Everglades Agricultural Area Storage Reservoir, phase 2                                                          | 1-A.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2019: WCA-3 Decompartmentalization                                                                                     | 1-A.3     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2028: Lake Okeechobee Aquifer Storage and Recovery)                                                                    | 1-A.2     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2035: Central Lake Belt Storage Area                                                                                   | 1-A.1     |
| Total System: Urban and Agricultural Water Supply                  | Target: Water provided to all users during droughts up to the level of severity of a one-in-ten-year frequency of occurrence                                                                                      | Loss of freshwater through discharge and seepage                                                                                                                                                                                                                                                    | Surface storage reservoirs, aquifer storage and recovery, and seepage management projects                                                                                                                                                                                                                       | 2008: Kissimmee Basin Water Supply Plan                                                                                | 3.C.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2008: Lower East Coast Water Supply Plan                                                                               | 3.C.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2008: Lower West Coast Water Supply Plan                                                                               | 3.C.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2008: Upper East Coast Water Supply Plan                                                                               | 3.C.1     |
|                                                                    |                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                 | 2013: C-43 Basin Storage Reservoir and ASR                                                                             | 1.A.2     |

Table C-1. Linkages between Work Efforts and Ecosystem Restoration

| MEASURES OF ECOSYSTEM HEALTH                    |                                                                                                                                   | LINK AGES                                                                                                                                                                          |                                                                                                                                                                                                                                                                             | MEASURES OF WORK EFFORTS                                                                                                                                                                                                            |                                           |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Indicator                                       | Measurable Output                                                                                                                 | Stressor                                                                                                                                                                           | Restoration Action                                                                                                                                                                                                                                                          | Examples of Projects Related To Eliminating/Mitigating Stressor                                                                                                                                                                     | Objective                                 |
|                                                 |                                                                                                                                   |                                                                                                                                                                                    | are expected to recapture the water that is currently lost to the ecosystem through unnatural discharges.                                                                                                                                                                   | 2020: Palm Beach Co. Agricultural Reserve and ASR<br>2021: C-51 Regional Groundwater ASR<br>2024: Site 1 Impoundment and ASR<br>2028: Lake Okeechobee ASR                                                                           | 1.A.2<br>1.A.2<br>1.A.2<br>1.A.2          |
| Estuaries: Oyster beds in the St. Lucie Estuary | Approximately 900 acres of healthy oyster beds.                                                                                   | Unnatural changes in water salinity caused by excessive freshwater flows into the estuary; also changes in water quality caused by discharges of unnaturally nutrient-laden waters | Storage projects and projects that will remove barriers to sheet flow, thus curtailing the unnatural discharges of nutrient laden freshwater into the estuary, are expected to create conditions for oyster recolonization of areas with a suitable substrate.              | 2013: Lake Okeechobee Watershed<br>2033: Indian River Lagoon South, C-44 Basin Storage Reservoir                                                                                                                                    | 1-A.1<br>1-A.1                            |
| Estuaries: Roseate spoonbills                   | At least 1,000 nesting pairs throughout Florida Bay, and some nesting pairs in the coastal zone of the southwestern gulf coast    | Declines in the productivity of estuarine feeding grounds caused by too little freshwater entering the estuaries                                                                   | Projects that will restore more natural flow volumes and patterns of freshwater entering the Florida Bay and gulf coast estuaries are expected to improve the productivity of feeding grounds used by roseate spoonbills and lead to population increases for this species. | 2007: Henderson Creek/Belle Meade Restoration<br>TBD: Southern Golden Gate Estates                                                                                                                                                  | 1-B.1<br>2-A.1                            |
| Lake Okeechobee: Submerged Aquatic Vegetation   | Sustain at least 40,000 acres of healthy submerged aquatic vegetation around the shoreline of Lake Okeechobee on an ongoing basis | Unnaturally frequent and prolonged high water levels in the lake                                                                                                                   | Major surface water and aquifer storage projects in the Lake Okeechobee watershed, along with the watershed water quality treatment                                                                                                                                         | 2009: Everglades Agricultural Area Storage Reservoir, Phase 1<br>2013: Lake Okeechobee Watershed<br>2013: C-43 Basin Storage, Phase 1<br>2014: Everglades Agricultural Area Storage Reservoir, Phase 2<br>2028: Lake Okeechobee ASR | 1-A.1<br>1-A.1<br>1-A.1<br>1-A.1<br>1-A.2 |

Table C-1. Linkages between Work Efforts and Ecosystem Restoration

| Table C-1. Linkages between Work Efforts and Ecosystem Restoration |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      |                                                                                  |           |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------|
| MEASURES OF ECOSYSTEM HEALTH                                       |                                                                                                                      | LINK AGES                                                                                             |                                                                                                                                                                                                                                                                                                                                                      | MEASURES OF WORK EFFORTS                                                         |           |
| Indicator                                                          | Measurable Output                                                                                                    | Stressor                                                                                              | Restoration Action                                                                                                                                                                                                                                                                                                                                   | Examples of Projects Related To Eliminating/Mitigating Stressor                  | Objective |
|                                                                    |                                                                                                                      |                                                                                                       | project, are expected to result in lower lake levels and to significantly improve the long-term survival of large beds of submerged aquatic vegetation.                                                                                                                                                                                              |                                                                                  |           |
| Everglades Ridge and Slough: Tree Islands                          | Target: A 90 percent recovery of the acreage and number of tree islands existing in 1940, and a health index of 0.90 | Unnaturally frequent and prolonged flooding of tree islands<br><br>Unnaturally frequent intense fires | Major surface water and aquifer storage projects upstream from the Everglades, along with removal of impediments to water flow through the Everglades, are expected to reduce unnatural flooding of tree islands.<br><br>Rainfall-driven operations and water use restrictions are expected to reduce intense fires due to severe drought conditions | 2008: Lower West Coast Regional Irrigation Distribution System Master Plan Study | 3-C.2     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2009: Everglades Agricultural Area Storage Reservoir, Phase 1                    | 1-A.1     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2014: Everglades Agricultural Area Storage Reservoir, Phase 2                    | 1-A.1     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2019: WCA-3 Decompartmentalization                                               | 1-A.3     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2020: South Miami-Dade County Reuse                                              | 3-C.2     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2020: West Miami-Dade County Reuse                                               | 3-C.2     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2028: Lake Okeechobee Aquifer Storage and Recovery                               | 1-A.2     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2035: Central Lake Belt Storage Area                                             | 1-A.1     |
| Florida Bay: Seagrass beds                                         | A 65-70 percent coverage of Florida Bay with high-quality seagrass beds                                              | Disruptions of natural volume and timing of freshwater flows into the southern estuaries              | Projects that increase freshwater flows into the bay, such as the projects to improve water management practices in the C-111 and Taylor Slough basin, are expected to improve conditions for seagrass beds.                                                                                                                                         | 2008: Canal 111                                                                  | 1-A.3     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2009: Everglades Agricultural Area Storage Reservoir, phase 1                    | 1-A.1     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2014: Everglades Agricultural Area Storage Reservoir, phase 2                    | 1-A.1     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2019: WCA-3 Decompartmentalization                                               | 1-A.3     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2028: Lake Okeechobee Aquifer Storage and Recovery)                              | 1-A.2     |
|                                                                    |                                                                                                                      |                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      | 2035: Central Lake Belt Storage Area                                             | 1-A.1     |
| Florida Bay:                                                       | A long-term average rate of                                                                                          | Disruptions of natural                                                                                | Restoration of flows                                                                                                                                                                                                                                                                                                                                 | 2018: Florida Keys Tidal Restoration                                             | 1-A.3     |



Table C-1. Linkages between Work Efforts and Ecosystem Restoration

| MEASURES OF ECOSYSTEM HEALTH             |                                                                                                                                                                                                                      | LINK AGES                                                         |                                                                                                        | MEASURES OF WORK EFFORTS                                        |           |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------|
| Indicator                                | Measurable Output                                                                                                                                                                                                    | Stressor                                                          | Restoration Action                                                                                     | Examples of Projects Related To Eliminating/Mitigating Stressor | Objective |
| Commercial harvest rates for pink shrimp | commercial harvest of pink shrimp on the Dry Tortugas fishing grounds that equals or exceeds 600 pounds per vessel-day, and an amount of large shrimp in the long-term average catch exceeding 500 pounds per vessel | volume and timing of freshwater flows into the southern estuaries | that more closely match natural hydrological patterns should benefit the Tortugas pink shrimp fishery. |                                                                 |           |

## **APPENDIX D: WATER RESOURCES DEVELOPMENT ACT OF 2000, TITLE VI COMPREHENSIVE EVERGLADES RESTORATION**

WATER RESOURCES DEVELOPMENT ACT 2000  
SECTION 601 COMPREHENSIVE EVERGLADES RESTORATION PLAN

### **TITLE VI--COMPREHENSIVE EVERGLADES RESTORATION**

Sec. 601. Comprehensive Everglades restoration plan.

Sec. 602. Sense of Congress concerning Homestead Air Force Base.

#### **SEC. 601. COMPREHENSIVE EVERGLADES RESTORATION PLAN.**

(a) DEFINITIONS- In this section, the following definitions apply:

(1) CENTRAL AND SOUTHERN FLORIDA PROJECT-

(A) IN GENERAL- The term 'Central and Southern Florida Project' means the project for Central and Southern Florida authorized under the heading 'CENTRAL AND SOUTHERN FLORIDA' in section 203 of the Flood Control Act of 1948 (62 Stat. 1176).

(B) INCLUSION- The term 'Central and Southern Florida Project' includes any modification to the project authorized by this section or any other provision of law.

(2) GOVERNOR- The term 'Governor' means the Governor of the State of Florida.

(3) NATURAL SYSTEM-

(A) IN GENERAL- The term 'natural system' means all land and water managed by the Federal Government or the State within the South Florida ecosystem.

(B) INCLUSIONS- The term 'natural system' includes--

- (i) water conservation areas;
- (ii) sovereign submerged land;
- (iii) Everglades National Park;
- (iv) Biscayne National Park;
- (v) Big Cypress National Preserve;
- (vi) other Federal or State (including a political subdivision of a State) land that is designated and managed for conservation purposes; and
- (vii) any tribal land that is designated and managed for conservation purposes, as approved by the tribe.

(4) PLAN- The term 'Plan' means the Comprehensive Everglades Restoration Plan contained in the 'Final Integrated Feasibility Report and Programmatic Environmental Impact Statement', dated April 1, 1999, as modified by this section.

(5) SOUTH FLORIDA ECOSYSTEM-

(A) IN GENERAL- The term 'South Florida ecosystem' means the area consisting of the land and water within the boundary of the South Florida Water Management District in effect on July 1, 1999.

(B) INCLUSIONS- The term 'South Florida ecosystem' includes--

- (i) the Everglades;
- (ii) the Florida Keys; and
- (iii) the contiguous near-shore coastal water of South Florida.

(6) STATE- The term 'State' means the State of Florida.

(b) COMPREHENSIVE EVERGLADES RESTORATION PLAN-

(1) APPROVAL-

(A) IN GENERAL- Except as modified by this section, the Plan is approved as a framework for modifications and operational changes to the Central and Southern Florida Project that are needed to restore, preserve, and protect the South Florida

ecosystem while providing for other water-related needs of the region, including water supply and flood protection. The Plan shall be implemented to ensure the protection of water quality in, the reduction of the loss of fresh water from, and the improvement of the environment of the South Florida ecosystem and to achieve and maintain the benefits to the natural system and human environment described in the Plan, and required pursuant to this section, for as long as the project is authorized.

(B) INTEGRATION- In carrying out the Plan, the Secretary shall integrate the activities described in subparagraph (A) with ongoing Federal and State projects and activities in accordance with section 528(c) of the Water Resources Development Act of 1996 (110 Stat. 3769). Unless specifically provided herein, nothing in this section shall be construed to modify any existing cost share or responsibility for projects as listed in subsection (c) or (e) of section 528 of the Water Resources Development Act of 1996 (110 Stat. 3769).

(2) SPECIFIC AUTHORIZATIONS-

(A) IN GENERAL-

(i) PROJECTS- The Secretary shall carry out the projects included in the Plan in accordance with subparagraphs (B), (C), (D), and (E).

(ii) CONSIDERATIONS- In carrying out activities described in the Plan, the Secretary shall--

(I) take into account the protection of water quality by considering applicable State water quality standards; and

(II) include such features as the Secretary determines are necessary to ensure that all ground water and surface water discharges from any project feature authorized by this subsection will meet all applicable water quality standards and applicable water quality permitting requirements.

(iii) REVIEW AND COMMENT- In developing the projects authorized under subparagraph (B), the Secretary shall provide for public review and comment in accordance with applicable Federal law.

(B) PILOT PROJECTS- The following pilot projects are authorized for implementation, after review and approval by the Secretary, at a total cost of \$69,000,000, with an estimated Federal cost of \$34,500,000 and an estimated non-Federal cost of \$34,500,000:

(i) Caloosahatchee River (C-43) Basin ASR, at a total cost of \$6,000,000, with an estimated Federal cost of \$3,000,000 and an estimated non-Federal cost of \$3,000,000.

(ii) Lake Belt In-Ground Reservoir Technology, at a total cost of \$23,000,000, with an estimated Federal cost of \$11,500,000 and an estimated non-Federal cost of \$11,500,000.

(iii) L-31N Seepage Management, at a total cost of \$10,000,000, with an estimated Federal cost of \$5,000,000 and an estimated non-Federal cost of \$5,000,000.

(iv) Wastewater Reuse Technology, at a total cost of \$30,000,000, with an estimated Federal cost of \$15,000,000 and an estimated non-Federal cost of \$15,000,000.

(C) INITIAL PROJECTS- The following projects are authorized for implementation, after review and approval by the Secretary, subject to the conditions stated in subparagraph (D), at a total cost of \$1,100,918,000, with an estimated Federal cost of \$550,459,000 and an estimated non-Federal cost of \$550,459,000:

(i) C-44 Basin Storage Reservoir, at a total cost of \$112,562,000, with an estimated Federal cost of \$56,281,000 and an estimated non-Federal cost of \$56,281,000.

(ii) Everglades Agricultural Area Storage Reservoirs--Phase I, at a total cost of \$233,408,000, with an estimated Federal cost of \$116,704,000 and an estimated non-Federal cost of \$116,704,000.

(iii) Site 1 Impoundment, at a total cost of \$38,535,000, with an estimated Federal cost of \$19,267,500 and an estimated non-Federal cost of \$19,267,500.

- (iv) Water Conservation Areas 3A/3B Levee Seepage Management, at a total cost of \$100,335,000, with an estimated Federal cost of \$50,167,500 and an estimated non-Federal cost of \$50,167,500.
- (v) C-11 Impoundment and Stormwater Treatment Area, at a total cost of \$124,837,000, with an estimated Federal cost of \$62,418,500 and an estimated non-Federal cost of \$62,418,500.
- (vi) C-9 Impoundment and Stormwater Treatment Area, at a total cost of \$89,146,000, with an estimated Federal cost of \$44,573,000 and an estimated non-Federal cost of \$44,573,000.
- (vii) Taylor Creek/Nubbin Slough Storage and Treatment Area, at a total cost of \$104,027,000, with an estimated Federal cost of \$52,013,500 and an estimated non-Federal cost of \$52,013,500.
- (viii) Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within Water Conservation Area 3, at a total cost of \$26,946,000, with an estimated Federal cost of \$13,473,000 and an estimated non-Federal cost of \$13,473,000.
- (ix) North New River Improvements, at a total cost of \$77,087,000, with an estimated Federal cost of \$38,543,500 and an estimated non-Federal cost of \$38,543,500.
- (x) C-111 Spreader Canal, at a total cost of \$94,035,000, with an estimated Federal cost of \$47,017,500 and an estimated non-Federal cost of \$47,017,500.
- (xi) Adaptive Assessment and Monitoring Program, at a total cost of \$100,000,000, with an estimated Federal cost of \$50,000,000 and an estimated non-Federal cost of \$50,000,000.

(D) CONDITIONS-

- (i) PROJECT IMPLEMENTATION REPORTS- Before implementation of a project described in any of clauses (i) through (x) of subparagraph (C), the Secretary shall review and approve for the project a project implementation report prepared in accordance with subsections (f) and (h).
- (ii) SUBMISSION OF REPORT- The Secretary shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate the project implementation report required by subsections (f) and (h) for each project under this paragraph (including all relevant data and information on all costs).
- (iii) FUNDING CONTINGENT ON APPROVAL- No appropriation shall be made to construct any project under this paragraph if the project implementation report for the project has not been approved by resolutions adopted by the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate.
- (iv) MODIFIED WATER DELIVERY- No appropriation shall be made to construct the Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement Project (including component AA, Additional S-345 Structures; component QQ Phase 1, Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3; component QQ Phase 2, WCA 3 Decompartmentalization and Sheetflow Enhancement; and component SS, North New River Improvements) or the Central Lakebelt Storage Project (including components S and EEE, Central Lake Belt Storage Area) until the completion of the project to improve water deliveries to Everglades National Park authorized by section 104 of the Everglades National Park Protection and Expansion Act of 1989 (16 U.S.C. 410r-8).

(E) MAXIMUM COST OF PROJECTS- Section 902 of the Water Resources Development Act of 1986 (33 U.S.C. 2280) shall apply to each project feature authorized under this subsection.

(c) ADDITIONAL PROGRAM AUTHORITY

- (1) IN GENERAL- To expedite implementation of the Plan, the Secretary may implement modifications to the Central and Southern Florida Project that--

- (A) are described in the Plan; and
- (B) will produce a substantial benefit to the restoration, preservation and protection of the South Florida ecosystem.
- (2) PROJECT IMPLEMENTATION REPORTS- Before implementation of any project feature authorized under this subsection, the Secretary shall review and approve for the project feature a project implementation report prepared in accordance with subsections (f) and (h).
- (3) FUNDING-
  - (A) INDIVIDUAL PROJECT FUNDING-
    - (i) FEDERAL COST- The total Federal cost of each project carried out under this subsection shall not exceed \$12,500,000.
    - (ii) OVERALL COST- The total cost of each project carried out under this subsection shall not exceed \$25,000,000.
  - (B) AGGREGATE COST- The total cost of all projects carried out under this subsection shall not exceed \$206,000,000, with an estimated Federal cost of \$103,000,000 and an estimated non-Federal cost of \$103,000,000.
- (d) AUTHORIZATION OF FUTURE PROJECTS-
  - (1) IN GENERAL- Except for a project authorized by subsection (b) or (c), any project included in the Plan shall require a specific authorization by Congress.
  - (2) SUBMISSION OF REPORT- Before seeking congressional authorization for a project under paragraph (1), the Secretary shall submit to Congress--
    - (A) a description of the project; and
    - (B) a project implementation report for the project prepared in accordance with subsections (f) and (h).
- (e) COST SHARING-
  - (1) FEDERAL SHARE- The Federal share of the cost of carrying out a project authorized by subsection (b), (c), or (d) shall be 50 percent.
  - (2) NON-FEDERAL RESPONSIBILITIES- The non-Federal sponsor with respect to a project described in subsection (b), (c), or (d), shall be--
    - (A) responsible for all land, easements, rights-of-way, and relocations necessary to implement the Plan; and
    - (B) afforded credit toward the non-Federal share of the cost of carrying out the project in accordance with paragraph (5)(A).
  - (3) FEDERAL ASSISTANCE-
    - (A) IN GENERAL- The non-Federal sponsor with respect to a project authorized by subsection (b), (c), or (d) may use Federal funds for the purchase of any land, easement, rights-of-way, or relocation that is necessary to carry out the project if any funds so used are credited toward the Federal share of the cost of the project.
    - (B) AGRICULTURE FUNDS- Funds provided to the non-Federal sponsor under the Conservation Restoration and Enhancement Program (CREP) and the Wetlands Reserve Program (WRP) for projects in the Plan shall be credited toward the non-Federal share of the cost of the Plan if the Secretary of Agriculture certifies that the funds provided may be used for that purpose. Funds to be credited do not include funds provided under section 390 of the Federal Agriculture Improvement and Reform Act of 1996 (110 Stat. 1022).
  - (4) OPERATION AND MAINTENANCE- Notwithstanding section 528(e)(3) of the Water Resources Development Act of 1996 (110 Stat. 3770), the non-Federal sponsor shall be responsible for 50 percent of the cost of operation, maintenance, repair, replacement, and rehabilitation activities authorized under this section. Furthermore, the Seminole Tribe of Florida shall be responsible for 50 percent of the cost of operation, maintenance, repair, replacement, and rehabilitation activities for the Big Cypress Seminole Reservation Water Conservation Plan Project.
  - (5) CREDIT-

(A) IN GENERAL- Notwithstanding section 528(e)(4) of the Water Resources Development Act of 1996 (110 Stat. 3770) and regardless of the date of acquisition, the value of lands or interests in lands and incidental costs for land acquired by a non-Federal sponsor in accordance with a project implementation report for any project included in the Plan and authorized by Congress shall be--

- (i) included in the total cost of the project; and
- (ii) credited toward the non-Federal share of the cost of the project.

(B) WORK- The Secretary may provide credit, including in-kind credit, toward the non-Federal share for the reasonable cost of any work performed in connection with a study, preconstruction engineering and design, or construction that is necessary for the implementation of the Plan if--

- (i)(I) the credit is provided for work completed during the period of design, as defined in a design agreement between the Secretary and the non-Federal sponsor; or
- (II) the credit is provided for work completed during the period of construction, as defined in a project cooperation agreement for an authorized project between the Secretary and the non-Federal sponsor;
- (ii) the design agreement or the project cooperation agreement prescribes the terms and conditions of the credit; and
- (iii) the Secretary determines that the work performed by the non-Federal sponsor is integral to the project.

(C) TREATMENT OF CREDIT BETWEEN PROJECTS- Any credit provided under this paragraph may be carried over between authorized projects in accordance with subparagraph (D).

(D) PERIODIC MONITORING-

(i) IN GENERAL- To ensure that the contributions of the non-Federal sponsor equal 50 percent proportionate share for projects in the Plan, during each 5-year period, beginning with commencement of design of the Plan, the Secretary shall, for each project--

- (I) monitor the non-Federal provision of cash, in-kind services, and land; and
- (II) manage, to the maximum extent practicable, the requirement of the non-Federal sponsor to provide cash, in-kind services, and land.

(ii) OTHER MONITORING- The Secretary shall conduct monitoring under clause (i) separately for the preconstruction engineering and design phase and the construction phase.

(E) AUDITS- Credit for land (including land value and incidental costs) or work provided under this subsection shall be subject to audit by the Secretary.

(f) EVALUATION OF PROJECTS-

(1) IN GENERAL- Before implementation of a project authorized by subsection (c) or (d) or any of clauses (i) through (x) of subsection (b)(2)(C), the Secretary, in cooperation with the non-Federal sponsor, shall complete, after notice and opportunity for public comment and in accordance with subsection (h), a project implementation report for the project.

(2) PROJECT JUSTIFICATION-

(A) IN GENERAL- Notwithstanding section 209 of the Flood Control Act of 1970 (42 U.S.C. 1962-2) or any other provision of law, in carrying out any activity authorized under this section or any other provision of law to restore, preserve, or protect the South Florida ecosystem, the Secretary may determine that--

- (i) the activity is justified by the environmental benefits derived by the South Florida ecosystem; and
- (ii) no further economic justification for the activity is required, if the Secretary determines that the activity is cost-effective.

(B) APPLICABILITY- Subparagraph (A) shall not apply to any separable element intended to produce benefits that are predominantly unrelated to the restoration, preservation, and protection of the natural system.

(g) EXCLUSIONS AND LIMITATIONS- The following Plan components are not approved for implementation:

(1) WATER INCLUDED IN THE PLAN-

(A) IN GENERAL- Any project that is designed to implement the capture and use of the approximately 245,000 acre-feet of water described in section 7.7.2 of the Plan shall not be implemented until such time as--

- (i) the project-specific feasibility study described in subparagraph (B) on the need for and physical delivery of the approximately 245,000 acre-feet of water, conducted by the Secretary, in cooperation with the non-Federal sponsor, is completed;
- (ii) the project is favorably recommended in a final report of the Chief of Engineers; and
- (iii) the project is authorized by Act of Congress.

(B) PROJECT-SPECIFIC FEASIBILITY STUDY- The project-specific feasibility study referred to in subparagraph (A) shall include--

- (i) a comprehensive analysis of the structural facilities proposed to deliver the approximately 245,000 acre-feet of water to the natural system;
- (ii) an assessment of the requirements to divert and treat the water;
- (iii) an assessment of delivery alternatives;
- (iv) an assessment of the feasibility of delivering the water downstream while maintaining current levels of flood protection to affected property; and
- (v) any other assessments that are determined by the Secretary to be necessary to complete the study.

(2) WASTEWATER REUSE-

(A) IN GENERAL- On completion and evaluation of the wastewater reuse pilot project described in subsection (b)(2)(B)(iv), the Secretary, in an appropriately timed 5-year report, shall describe the results of the evaluation of advanced wastewater reuse in meeting, in a cost-effective manner, the requirements of restoration of the natural system.

(B) SUBMISSION- The Secretary shall submit to Congress the report described in subparagraph (A) before congressional authorization for advanced wastewater reuse is sought.

(3) PROJECTS APPROVED WITH LIMITATIONS- The following projects in the Plan are approved for implementation with limitations:

(A) LOXAHATCHEE NATIONAL WILDLIFE REFUGE- The Federal share for land acquisition in the project to enhance existing wetland systems along the Loxahatchee National Wildlife Refuge, including the Strazzulla tract, should be funded through the budget of the Department of the Interior.

(B) SOUTHERN CORKSCREW REGIONAL ECOSYSTEM- The Southern Corkscrew regional ecosystem watershed addition should be accomplished outside the scope of the Plan.

(h) ASSURANCE OF PROJECT BENEFITS-

(1) IN GENERAL- The overarching objective of the Plan is the restoration, preservation, and protection of the South Florida Ecosystem while providing for other water-related needs of the region, including water supply and flood protection. The Plan shall be implemented to ensure the protection of water quality in, the reduction of the loss of fresh water from, the improvement of the environment of the South Florida Ecosystem and to achieve and maintain the benefits to the natural system and human environment described in the Plan, and required pursuant to this section, for as long as the project is authorized.

(2) AGREEMENT-

(A) IN GENERAL- In order to ensure that water generated by the Plan will be made available for the restoration of the natural system, no appropriations, except for any pilot project described in subsection (b)(2)(B), shall be made for the construction of a project contained in the Plan until the President and the Governor enter into a binding agreement under which the State shall ensure, by regulation or other appropriate means, that water made available by each project in the Plan shall not be permitted for a consumptive use or otherwise made unavailable by the State until such time as sufficient reservations of water for the restoration of the natural system are made under State law in accordance with the project implementation report for that project and consistent with the Plan.

(B) ENFORCEMENT-

(i) IN GENERAL- Any person or entity that is aggrieved by a failure of the United States or any other Federal Government instrumentality or agency, or the Governor or any other officer of a State instrumentality or agency, to comply with any provision of the agreement entered into under subparagraph (A) may bring a civil action in United States district court for an injunction directing the United States or any other Federal Government instrumentality or agency or the Governor or any other officer of a State instrumentality or agency, as the case may be, to comply with the agreement.

(ii) LIMITATIONS ON COMMENCEMENT OF CIVIL ACTION- No civil action may be commenced under clause (i) —

(I) before the date that is 60 days after the Secretary and the Governor receive written notice of a failure to comply with the agreement; or

(II) if the United States has commenced and is diligently prosecuting an action in a court of the United States or a State to redress a failure to comply with the agreement.

(C) TRUST RESPONSIBILITIES- In carrying out his responsibilities under this subsection with respect to the restoration of the South Florida ecosystem, the Secretary of the Interior shall fulfill his obligations to the Indian tribes in South Florida under the Indian trust doctrine as well as other applicable legal obligations.

(3) PROGRAMMATIC REGULATIONS-

(A) ISSUANCE- Not later than 2 years after the date of enactment of this Act, the Secretary shall, after notice and opportunity for public comment, with the concurrence of the Governor and the Secretary of the Interior, and in consultation with the Seminole Tribe of Florida, the Miccosukee Tribe of Indians of Florida, the Administrator of the Environmental Protection Agency, the Secretary of Commerce, and other Federal, State, and local agencies, promulgate programmatic regulations to ensure that the goals and purposes of the Plan are achieved.

(B) CONCURRENCY STATEMENT- The Secretary of the Interior and the Governor shall, not later than 180 days from the end of the public comment period on proposed programmatic regulations, provide the Secretary with a written statement of concurrence or nonconcurrence. A failure to provide a written statement of concurrence or nonconcurrence within such time frame will be deemed as meeting the concurrency requirements of subparagraph (A)(i). A copy of any concurrency or nonconcurrence statements shall be made a part of the administrative record and referenced in the final programmatic regulations. Any nonconcurrence statement shall specifically detail the reason or reasons for the nonconcurrence.

(C) CONTENT OF REGULATIONS-

(i) IN GENERAL- Programmatic regulations promulgated under this paragraph shall establish a process--

(I) for the development of project implementation reports, project cooperation agreements, and operating manuals that ensure that the goals and objectives of the Plan are achieved;

(II) to ensure that new information resulting from



changed or unforeseen circumstances, new scientific or technical information or information that is developed through the principles of adaptive management contained in the Plan, or future authorized changes to the Plan are integrated into the implementation of the Plan; and

(III) to ensure the protection of the natural system consistent with the goals and purposes of the Plan, including the establishment of interim goals to provide a means by which the restoration success of the Plan may be evaluated throughout the implementation process.

(ii) LIMITATION ON APPLICABILITY OF PROGRAMMATIC REGULATIONS-

Programmatic regulations promulgated under this paragraph shall expressly prohibit the requirement for concurrence by the Secretary of the Interior or the Governor on project implementation reports, project cooperation agreements, operating manuals for individual projects undertaken in the Plan, and any other documents relating to the development, implementation, and management of individual features of the Plan, unless such concurrence is provided for in other Federal or State laws.

(D) SCHEDULE AND TRANSITION RULE-

(i) IN GENERAL- All project implementation reports approved before the date of promulgation of the programmatic regulations shall be consistent with the Plan.

(ii) PREAMBLE- The preamble of the programmatic regulations shall include a statement concerning the consistency with the programmatic regulations of any project implementation reports that were approved before the date of promulgation of the regulations.

(E) REVIEW OF PROGRAMMATIC REGULATIONS- Whenever necessary to attain Plan goals and purposes, but not less often than every 5 years, the Secretary, in accordance with subparagraph (A), shall review the programmatic regulations promulgated under this paragraph.

(4) PROJECT-SPECIFIC ASSURANCES-

(A) PROJECT IMPLEMENTATION REPORTS-

(i) IN GENERAL- The Secretary and the non-Federal sponsor shall develop project implementation reports in accordance with section 10.3.1 of the Plan.

(ii) COORDINATION- In developing a project implementation report, the Secretary and the non-Federal sponsor shall coordinate with appropriate Federal, State, tribal, and local governments.

(iii) REQUIREMENTS- A project implementation report shall--

(I) be consistent with the Plan and the programmatic regulations promulgated under paragraph (3);

(II) describe how each of the requirements stated in paragraph (3)(B) is satisfied;

(III) comply with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.);

(IV) identify the appropriate quantity, timing, and distribution of water dedicated and managed for the natural system;

(V) identify the amount of water to be reserved or allocated for the natural system necessary to implement, under State law, subclauses (IV) and (VI);

(VI) comply with applicable water quality standards and applicable water quality permitting requirements under subsection (b)(2)(A)(ii);

(VII) be based on the best available science; and

(VIII) include an analysis concerning the cost-effectiveness and engineering feasibility of the project.

(B) PROJECT COOPERATION AGREEMENTS-

- (i) IN GENERAL- The Secretary and the non-Federal sponsor shall execute project cooperation agreements in accordance with section 10 of the Plan.
- (ii) CONDITION- The Secretary shall not execute a project cooperation agreement until any reservation or allocation of water for the natural system identified in the project implementation report is executed under State law.

(C) OPERATING MANUALS-

- (i) IN GENERAL- The Secretary and the non-Federal sponsor shall develop and issue, for each project or group of projects, an operating manual that is consistent with the water reservation or allocation for the natural system described in the project implementation report and the project cooperation agreement for the project or group of projects.
- (ii) MODIFICATIONS- Any significant modification by the Secretary and the non-Federal sponsor to an operating manual after the operating manual is issued shall only be carried out subject to notice and opportunity for public comment.

(5) SAVINGS CLAUSE-

(A) NO ELIMINATION OR TRANSFER- Until a new source of water supply of comparable quantity and quality as that available on the date of enactment of this Act is available to replace the water to be lost as a result of implementation of the Plan, the Secretary and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water, including those for--

- (i) an agricultural or urban water supply;
- (ii) allocation or entitlement to the Seminole Indian Tribe of Florida under section 7 of the Seminole Indian Land Claims Settlement Act of 1987 (25 U.S.C. 1772e);
- (iii) the Miccosukee Tribe of Indians of Florida;
- (iv) water supply for Everglades National Park; or
- (v) water supply for fish and wildlife.

(B) MAINTENANCE OF FLOOD PROTECTION- Implementation of the Plan shall not reduce levels of service for flood protection that are--

- (i) in existence on the date of enactment of this Act; and
- (ii) in accordance with applicable law.

(C) NO EFFECT ON TRIBAL COMPACT- Nothing in this section amends, alters, prevents, or otherwise abrogates rights of the Seminole Indian Tribe of Florida under the compact among the Seminole Tribe of Florida, the State, and the South Florida Water Management District, defining the scope and use of water rights of the Seminole Tribe of Florida, as codified by section 7 of the Seminole Indian Land Claims Settlement Act of 1987 (25 U.S.C. 1772e).

(i) DISPUTE RESOLUTION-

(1) IN GENERAL- The Secretary and the Governor shall within 180 days from the date of enactment of this Act develop an agreement for resolving disputes between the Corps of Engineers and the State associated with the implementation of the Plan. Such agreement shall establish a mechanism for the timely and efficient resolution of disputes, including--

(A) a preference for the resolution of disputes between the Jacksonville District of the Corps of Engineers and the South Florida Water Management District;

(B) a mechanism for the Jacksonville District of the Corps of Engineers or the South Florida Water Management District to initiate the dispute resolution process for unresolved issues;

(C) the establishment of appropriate timeframes and intermediate steps for the elevation of disputes to the Governor and the Secretary; and (D) a mechanism for the final resolution of disputes, within 180 days from the date that the dispute resolution process is initiated under subparagraph (B).

(2) **CONDITION FOR REPORT APPROVAL**- The Secretary shall not approve a project Implementation report under this section until the agreement established under this subsection has been executed.

(3) **NO EFFECT ON LAW**- Nothing in the agreement established under this subsection shall alter or amend any existing Federal or State law, or the responsibility of any party to the agreement to comply with any Federal or State law.

(j) **INDEPENDENT SCIENTIFIC REVIEW**-

(1) **IN GENERAL**- The Secretary, the Secretary of the Interior, and the Governor, in consultation with the South Florida Ecosystem Restoration Task Force, shall establish an independent scientific review panel convened by a body, such as the National Academy of Sciences, to review the Plan's progress toward achieving the natural system restoration goals of the Plan.

(2) **REPORT**- The panel described in paragraph (1) shall produce a biennial report to Congress, the Secretary, the Secretary of the Interior, and the Governor that includes an assessment of ecological indicators and other measures of progress in restoring the ecology of the natural system, based on the Plan.

(k) **OUTREACH AND ASSISTANCE**-

(1) **SMALL BUSINESS CONCERNS OWNED AND OPERATED BY SOCIALLY AND ECONOMICALLY DISADVANTAGED INDIVIDUALS**- In executing the Plan, the Secretary shall ensure that small business concerns owned and controlled by socially and economically disadvantaged individuals are provided opportunities to participate under section 15(g) of the Small Business Act (15 U.S.C. 644(g)).

(2) **COMMUNITY OUTREACH AND EDUCATION**-

(A) **IN GENERAL**- The Secretary shall ensure that impacts on socially and economically disadvantaged individuals, including individuals with limited English proficiency, and communities are considered during implementation of the Plan, and that such individuals have opportunities to review and comment on its implementation.

(B) **PROVISION OF OPPORTUNITIES**- The Secretary shall ensure, to the maximum extent practicable, that public outreach and educational opportunities are provided, during implementation of the Plan, to the individuals of South Florida, including individuals with limited English proficiency, and in particular for socially and economically disadvantaged communities.

(l) **REPORT TO CONGRESS**- Beginning on October 1, 2005, and periodically thereafter until October 1, 2036, the Secretary and the Secretary of the Interior, in consultation with the Environmental Protection Agency, the Department of Commerce, and the State of Florida, shall jointly submit to Congress a report on the implementation of the Plan. Such reports shall be completed not less often than every 5 years. Such reports shall include a description of planning, design, and construction work completed, the amount of funds expended during the period covered by the report (including a detailed analysis of the funds expended for adaptive assessment under subsection (b)(2)(C)(xi)), and the work anticipated over the next 5-year period. In addition, each report shall include--

(1) the determination of each Secretary, and the Administrator of the Environmental Protection Agency, concerning the benefits to the natural system and the human environment achieved as of the date of the report and whether the completed projects of the Plan are being operated in a manner that is consistent with the requirements of subsection (h);

(2) progress toward interim goals established in accordance with subsection (h)(3)(B); and

(3) a review of the activities performed by the Secretary under subsection (k) as they relate to socially and economically disadvantaged individuals and individuals with limited English proficiency.

(m) REPORT ON AQUIFER STORAGE AND RECOVERY PROJECT- Not later than 180 days after the date of enactment of this Act, the Secretary shall transmit to Congress a report containing a determination as to whether the ongoing Biscayne Aquifer Storage and Recovery Program located in Miami-Dade County has a substantial benefit to the restoration, preservation, and protection of the South Florida ecosystem.

(n) FULL DISCLOSURE OF PROPOSED FUNDING-

(1) FUNDING FROM ALL SOURCES- The President, as part of the annual budget of the United States Government, shall display under the heading 'Everglades Restoration' all proposed funding for the Plan for all agency programs.

(2) FUNDING FROM CORPS OF ENGINEERS CIVIL WORKS PROGRAM- The President, as part of the annual budget of the United States Government, shall display under the accounts 'Construction, General' and 'Operation and Maintenance, General' of the title 'Department of Defense--Civil, Department of the Army, Corps of Engineers--Civil', the total proposed funding level for each account for the Plan and the percentage such level represents of the overall levels in such accounts. The President shall also include an assessment of the impact such funding levels for the Plan would have on the budget year and long-term funding levels for the overall Corps of Engineers civil works program.

(o) SURPLUS FEDERAL LANDS- Section 390(f)(2)(A)(i) of the Federal Agriculture Improvement and Reform Act of 1996 (110 Stat. 1023) is amended by inserting after 'on or after the date of enactment of this Act' the following: 'and before the date of enactment of the Water Resources Development Act of 2000'.

(p) SEVERABILITY- If any provision or remedy provided by this section is found to be unconstitutional or unenforceable by any court of competent jurisdiction, any remaining provisions in this section shall remain valid and enforceable.

## **APPENDIX E: SOUTH FLORIDA ECOSYSTEM RESTORATION TASK FORCE CHARTER**

SOUTH FLORIDA ECOSYSTEM RESTORATION TASK FORCE  
Task Force Charter August 1, 1997

1. AUTHORIZATION. The South Florida Ecosystem Restoration Task Force was established by section 528(f) of Public Law 104-303, the Water Resources Development Act of 1996 (hereinafter referred to as the Act), enacted October 12, 1996.

2. DUTIES. The Task Force was established to:

- a. Consult with, and provide recommendations to, the Secretary of the Army and the non-Federal project sponsor in developing a comprehensive plan for the purpose of restoring, preserving, and protecting the South Florida ecosystem, in accordance with sections 528(b)(1) and 528(f)(2)(A) of the Act.
- b. Coordinate the development of consistent policies, strategies, plans, programs, projects, activities, and priorities for addressing the restoration, preservation, and protection of the South Florida ecosystem, as provided in section 528(f)(2)(B) of the Act. Such coordination shall include cooperation with the Secretary of the Army and the non-Federal project sponsor in determining whether a critical restoration project for the South Florida ecosystem will produce independent, immediate, and substantial restoration, preservation, and protection benefits, and will be generally consistent with the "Conceptual Plan for the Central and Southern Florida Project Restudy" prepared by the Governor's Commission for a Sustainable South Florida, in accordance with section 528(b)(3)(A) of the Act.
- c. Exchange information regarding programs, projects, and activities of the agencies and entities represented on the Task Force to promote ecosystem restoration and maintenance, as provided in section 528(f)(2)(C) of the Act.
- d. Establish a Florida-based working group to formulate, recommend, coordinate, and implement the policies, strategies, plans, programs, projects, activities, and priorities of the Task Force, in accordance with section 528(f)(2)(D) of the Act.
- e. Facilitate the resolution of interagency and intergovernmental conflicts associated with the restoration of the South Florida ecosystem among agencies and entities represented on the Task Force, as provided in section 528(f)(2)(F) of the Act.
- f. Coordinate scientific and other research associated with the restoration of the South Florida ecosystem, as provided in section 528(f)(2)(G) of the Act.
- g. Provide assistance and support to agencies and entities represented on the Task Force in their restoration activities, as provided in section 528(f)(2)(H) of the Act.
- h. Prepare an integrated financial plan and recommendations for coordinated budget requests for the funds proposed to be expended by agencies and entities represented on the Task Force for the restoration, preservation, and protection of the South Florida ecosystem, as provided in section 528(f)(2)(I) of the Act.
- i. Submit a biennial report to Congress that summarizes the activities of the Task Force; the policies, strategies, plans, programs, projects, activities, and priorities planned, developed, or implemented for the restoration of the South Florida ecosystem; and progress made toward the restoration, as provided in section 528(f)(2)(J) of the Act.

3. POWERS. The Task Force may -

- a. Establish advisory bodies as it deems necessary to assist the Task Force in its duties, including advisory bodies on public policy and scientific issues, in accordance with section 528(f)(2)(E)(i) of the Act.
- b. Select as an advisory body any entity, such as the Governor's Commission for a Sustainable South Florida, that represents a broad variety of public and private interests, as provided in section 528(f)(2)(E)(ii) of the Act.

c. Seek advice and input from any interested, knowledgeable, or affected party as it determines necessary to perform its duties, as provided in section 528(f)(3)(B).

South Florida Ecosystem Restoration  
Task Force Charter

**4. MEMBERSHIP.**

a. The Task Force consists of 14 members, as follows, pursuant to section 528(f) (1) of the Act:

(1) Seven Federal members, each of whom may be represented by a designee at the level of assistant secretary or the equivalent:

- (i) The Secretary of the Interior, who shall serve as chairperson.
- (ii) The Secretary of Commerce.
- (iii) The Secretary of the Army.
- (iv) The Attorney General.
- (v) The Administrator of the Environmental Protection Agency.
- (vi) The Secretary of Agriculture.
- (vii) The Secretary of Transportation.

(2) One member from each the following Indian Tribes, each of whom shall be appointed by the Secretary of the Interior based on the recommendations of the respective tribal chairman:

- (i) The Seminole Tribe of Florida.
- (ii) The Miccosukee Tribe of Indians of Florida.
- (3) Two representatives of the State of Florida appointed by the Secretary of the Interior based on the recommendations of the Governor.
- (4) One representative of the South Florida Water Management District appointed by the Secretary of the Interior based on the recommendations of the Governor.
- (5) Two representatives of local government in the State of Florida to be appointed by the Secretary of the Interior based on the recommendations of the Governor.

b. There is no time limit for the term of any member.

A person's membership shall terminate after leaving the office from which that member was appointed or designated. Any of the federal officials listed in subparagraph 4.a. (1), above, may at any time designate a substitute member at the level of assistant secretary or the equivalent. Any member appointed by the Secretary of the Interior based on the recommendation of the Governor may be removed or replaced by the Secretary of the Interior based on the recommendation of the Governor. Any member appointed by the Secretary of the Interior based on the recommendation of a tribal chairman may be removed or replaced by the Secretary of the Interior based on the recommendation of the chairman of the same Tribe.

c. Any vacancy on the Task Force shall be filled in the same manner in which the original appointment was made.

d. A member shall receive no additional compensation for service on the Task Force, in accordance with section 528(f) (4) of the Act.

**5. ADMINISTRATION.**

a. An Executive Director shall assist the Secretary of the Interior and the Task Force in carrying out their administrative and procedural duties, including the requirements in section 528(f)(3)(ii) of the Act. The Executive Director shall be appointed by the Secretary of the Interior, and shall be an employee of the United States Department of the Interior.

b. The Task Force will meet at the call of the Chairperson or of a majority of the members, but not less often than semi-annually.

c. A majority of the members then serving will constitute a quorum.

- d. Travel expenses incurred by a member of the Task Force in the performance of services for the Task Force shall be paid by the agency, tribe, or government that the member represents, as provided in section 528(f)(5) of the Act.
- e. The Task Force is not considered an advisory committee subject to the Federal Advisory Committee Act, and it may seek advice or input from interested, knowledgeable, or affected parties without being subject to the Federal Advisory Committee Act, pursuant to section 528(f)(3)(C) of the Water Resources Development Act of 1996.
- f. The Task Force shall implement procedures to facilitate public participation in its functions. Those procedures shall include providing advance notice of meetings, providing adequate opportunity for public input and comment, maintaining appropriate records, and making a record of the proceedings of meetings available for public inspection, as required by section 528(f)(3)(A)(i) of the Act.
- g. The Task Force may adopt principles and operational guidelines to set forth the required procedures for public participation and for any other purpose necessary or convenient for the accomplishment of the duties of the Task Force.
- h. In the absence of procedures adopted by the Task Force, the Executive Director may establish protocols for accomplishment of the duties of the Task Force. The Executive Director will promptly notify all members of the protocols. Such protocols may be amended by the Task Force.
- i. Nothing in this Charter shall be construed to prejudice the appointments of members already made pursuant to the Act, or the activities of the Task Force since October 12, 1996.

**6. PERSONNEL.**

- a. The Executive Director shall provide staff support to the Task Force.
- b. The Executive Director may be assisted by a permanent staff of the executive directorate; personnel on temporary assignment to the executive directorate from agencies, governments, or tribes represented on the Task Force or the Working Group; by members of the Task Force or Working Group or the staffs of such members; or by contractors. The Task Force may authorize the Executive Director to request, from the head of any Federal agency not represented on the Task Force, personnel to be detailed to assist the Executive Director or the Task Force.

**7. TERMINATION.** The Task Force shall continue to exist only for so long as it is authorized by Federal law.

Signed By:

Secretary of the Interior - Bruce Babbitt